

Diploma in AWS Cloud (6 Months)

Duration: 6 Months (~240 Hours)

Mode: Live Online / Classroom

Tools & Technologies: EC2, S3, IAM, VPC, RDS, Glue, Redshift, Kinesis, Athena, QuickSight, ECS, EKS, CloudFormation, Terraform

Certifications Prepared: AWS Certified Cloud Practitioner, AWS Certified SysOps Administrator – Associate, AWS Certified Developer – Associate, AWS Certified DevOps Engineer – Professional, AWS Certified Data Analytics – Specialty

Course 1: AWS Cloud Administration (3 Months)

Syllabus

Week 1: Cloud & AWS Fundamentals

- Cloud Concepts: IaaS, PaaS, SaaS
- AWS Global Infrastructure (Regions, AZs, Edge Locations)
- AWS Free Tier, Pricing Models
- AWS CLI & SDK Setup
- Hands-on: Launch EC2 with CLI
- Assignment

Week 2: Identity & Access Management (IAM)

- IAM Users, Groups, Policies, Roles
- MFA, Access Keys, Federation
- Service-linked roles
- Security Best Practices (least privilege)
- Hands-on: Secure IAM setup with MFA + S3 access policy
- Assignment

Week 3: Virtual Private Cloud (VPC)

- VPC, CIDR, Subnets (Public & Private)
- Route Tables, Internet & NAT Gateways
- Security Groups vs NACLs
- VPN, Direct Connect overview
- Hands-on: Multi-tier VPC setup
- Assignment

Week 4: Compute with EC2

- Instance Families (General, Compute, Memory optimized)
- AMIs, Snapshots, Elastic IPs
- Auto Scaling Groups, Elastic Load Balancers (ALB/NLB)
- EBS vs EFS
- Hands-on: Web App with Auto Scaling + ELB
- Assignment
- Mock Interview 1

Week 5: Storage Services

- Amazon S3: Buckets, Objects, ACLs, Policies
- S3 Storage Classes & Lifecycle Rules
- Glacier & Archive Storage
- Cross-Region Replication
- Hands-on: Host static website on S3 + CloudFront CDN
- Assignment

Week 6: Monitoring & Logging

- CloudWatch Metrics, Dashboards, Alarms
- CloudTrail Logs & Events
- AWS Config for Compliance
- Trusted Advisor Recommendations
- Hands-on: EC2 Monitoring Dashboard in CloudWatch
- Assignment

Week 7: Databases

- Amazon RDS (MySQL, PostgreSQL)
- Multi-AZ Failover, Read Replicas
- DynamoDB Basics (NoSQL)
- Backup, Restore & Security
- Hands-on: Deploy RDS DB & connect with EC2 app
- Assignment

Week 8: Capstone Project & Interview

- Project: Multi-tier Application (VPC + EC2 + S3 + RDS + CloudWatch)
- Resume Prep for AWS Admin Role
- Assignment
- Mock Interview 2

Course 2: AWS Cloud DevOps (3 Months)

Syllabus

Week 1: Infrastructure as Code (IaC)

- CloudFormation: Templates, Stacks, Parameters
- Terraform: Providers, State, Variables
- Best Practices in IaC
- Hands-on: EC2 + S3 using CloudFormation
- Assignment

Week 2: AWS Developer Tools

- CodeCommit (Git Repo)
- CodeBuild (Automated Builds)
- CodeDeploy (App Deployment)
- CodePipeline (CI/CD Orchestration)
- Hands-on: End-to-End CI/CD pipeline
- Assignment

Week 3: Deployment Strategies

- Blue-Green Deployments
- Canary Releases
- Rolling Updates
- Elastic Beanstalk Intro
- Hands-on: Node.js App Deployment with Blue-Green Strategy
- Assignment

Week 4: Containers on AWS (ECS)

- ECS Cluster Setup (EC2 vs Fargate)
- Task Definitions, Services, Scaling
- Load Balancing for Containers
- Hands-on: Deploy Microservices on ECS
- Assignment
- Mock Interview 1

Week 5: Kubernetes on AWS (EKS)

- EKS Cluster Setup (eksctl)
- Worker Node Management
- IAM Roles for Service Accounts
- Deployments with Helm Charts
- Hands-on: App Deployment on EKS
- Assignment

Week 6: Serverless & Event-Driven

- Lambda Functions & Triggers
- API Gateway Integration
- EventBridge Overview
- Hands-on: Serverless API with Lambda + API Gateway
- Assignment

Week 7: Monitoring & Security

- CloudWatch Logs & Alarms for CI/CD
- X-Ray for Distributed Tracing
- GuardDuty & Inspector for Security
- Hands-on: Monitoring CI/CD Workflows
- Assignment

Week 8: Capstone Project & Interview

- Project: CI/CD Pipeline (CodePipeline + EKS + CloudWatch)
- Resume Prep for DevOps Role
- Assignment
- Mock Interview 2

Course 3: AWS Data Engineering & Analytics (3 Months)

Syllabus

Week 1: Data Lakes with S3

- Data Lake Concepts & Architecture
- Partitioning, Versioning, Lifecycle Rules
- Data Ingestion Patterns (Batch vs Streaming)
- Hands-on: Create S3 Data Lake
- Assignment

Week 2: AWS Glue ETL

- Crawlers, Catalogs, Schema Detection
- ETL Jobs in PySpark
- Schema Evolution & Partitions
- Hands-on: Raw → Curated ETL Pipeline
- Assignment

Week 3: Amazon Redshift

- Cluster Setup & Node Types
- COPY/UNLOAD Commands
- Redshift Spectrum with S3
- Hands-on: Create Data Warehouse & Load Data
- Assignment

Week 4: Real-Time Streaming with Kinesis

- Kinesis Streams
- Kinesis Firehose Delivery to S3/Redshift
- Kinesis Analytics SQL Queries
- Hands-on: Real-Time Pipeline (Kinesis → Redshift)
- Assignment
- Mock Interview 1

Week 5: Serverless Analytics with Athena

- Query S3 Data with Athena
- Integrate with Glue Catalog
- Cost Optimization
- Hands-on: Query JSON/CSV logs from S3
- Assignment

Week 6: Visualization with QuickSight

- Data Sources, Datasets
- Dashboard Creation
- Integration with Redshift & Athena
- Hands-on: Sales Dashboard
- Assignment

Week 7: Big Data with EMR

- EMR Cluster Setup
- Spark & Hive Jobs
- EMR-S3 Integration
- Hands-on: Large Dataset Processing
- Assignment

Week 8: Capstone Project & Interview

- Project: Real-time ETL pipeline (Kinesis → S3 → Glue → Redshift → QuickSight Dashboard)
- Resume Prep for AWS Data Engineer
- Assignment
- Mock Interview 2

Learning Outcomes

- Administer AWS infrastructure (EC2, S3, IAM, VPC, RDS, Monitoring)
- Implement DevOps workflows with CI/CD, ECS/EKS, Lambda, and CloudFormation
- Design scalable data pipelines with S3, Glue, Redshift, and Kinesis
- Deliver business insights with Redshift, QuickSight, and Athena
- Prepare for AWS Certifications: Cloud Practitioner, SysOps Administrator – Associate, Developer – Associate, DevOps Engineer – Professional, Data Analytics – Specialty