

## **AWS Certified DevOps Engineer – Professional**

### **Course Outline**

#### **Day 1**

- **Module 0: Course Overview**
  - Course objectives
  - Suggested prerequisites
  - Course breakdown
- **Module 1: Introduction to DevOps**
  - Overview of DevOps
  - Amazon's journey to DevOps
  - Foundations for DevOps
- **Module 2: Infrastructure Automation**
  - Introduction to Infrastructure Automation
  - Exploring AWS CloudFormation templates
  - Modifying AWS CloudFormation templates
  - Demonstration: Structure, parameters, stacks, updates, importing resources, and drift detection in AWS CloudFormation
- **Module 3: AWS Toolkits**
  - Configuring the AWS CLI
  - Overview of AWS SDKs, AWS SAM CLI, and AWS CDK
  - Using AWS Cloud9
  - Demonstration: AWS CLI and AWS CDK
  - Hands-on Lab: Provisioning and managing basic infrastructure with AWS CloudFormation
- **Module 4: CI/CD with Development Tools**
  - Overview of CI/CD Pipeline and AWS Dev Tools
  - Demonstration: AWS CodeCommit, AWS CodeBuild, AWS CodeDeploy, and AWS CodePipeline
  - Hands-on Lab: Deploying an application to an EC2 fleet using AWS CodeDeploy

#### **Day 2**

- **Module 4: CI/CD with Development Tools (Continued)**
  - Deep dive into AWS CodePipeline
  - Demonstration: AWS integration with Jenkins
  - Hands-on Lab: Automating code deployments using AWS CodePipeline
- **Module 5: Introduction to Microservices**
  - Overview of Microservices architecture
- **Module 6: DevOps and Containers**

- Deploying applications with Docker
  - Exploring Amazon ECS, AWS Fargate, Amazon ECR, and Amazon EKS
  - Demonstration: CI/CD pipeline deployment in a containerized application
  - **Module 7: DevOps and Serverless Computing**
    - Overview of AWS Lambda, AWS Fargate, AWS SAM, and AWS Step Functions
    - Demonstration: AWS Lambda characteristics and quick start in AWS Cloud9
    - Hands-on Lab: Deploying a serverless application using AWS SAM and a CI/CD pipeline
  - **Module 8: Deployment Strategies**
    - Continuous Deployment overview
    - Deployments using AWS services
  - **Module 9: Automated Testing**
    - Introduction to testing in CI/CD
    - Types of tests: Unit, integration, fault tolerance, load, and synthetic
    - Product and service integrations
- Day 3**
- **Module 10: Security Automation**
    - Introduction to DevSecOps
    - Securing the CI/CD pipeline
    - Threat detection tools
    - Demonstration: AWS Security Hub, Amazon GuardDuty, AWS Config, and Amazon Inspector
  - **Module 11: Configuration Management**
    - Introduction to configuration management processes
    - AWS services and tools for configuration management
    - Hands-on Lab: Performing blue/green deployments with CI/CD pipelines and Amazon ECS
  - **Module 12: Observability**
    - Overview of observability in DevOps
    - AWS tools for observability
    - Hands-on Lab: Using AWS DevOps tools for CI/CD pipeline automation
  - **Module 13: Reference Architecture (Optional)**
    - Overview of reference architectures
  - **Module 14: Course Summary**
    - Review of DevOps components
    - CI/CD pipeline recap
    - Overview of AWS Certification options