

AWS Certified Developer – Associate

Course Outline

Day 1

Module 1: Course Overview

- Overview of logistics, student resources, agenda, and introductions

Module 2: Building a Web Application on AWS

- Architecture discussion of the application to be built
- Overview of AWS services required for the web application
- Storage, management, and hosting of the web application

Module 3: Getting Started with Development on AWS

- Accessing AWS services programmatically
- Programmatic patterns and their efficiencies in AWS SDKs and AWS CLI
- The value of AWS Cloud9 in development

Module 4: Getting Started with Permissions

- AWS Identity and Access Management (IAM) for development environments
- Testing and configuring IAM permissions
- Setting up IDEs and SDKs for development
- Accessing AWS services using SDKs and AWS Cloud9

Lab 1: Configure the Developer Environment

- Connecting to a developer environment
- Installing and configuring IDEs and AWS CLI
- Assigning IAM policies and roles to manage S3 buckets

Module 5: Getting Started with Storage

- Concepts of Amazon S3
- Securing data with Amazon S3
- Setting up SDK dependencies and connecting to Amazon S3
- Understanding request and response objects

Module 6: Processing Your Storage Operations

- Key operations with Amazon S3 buckets and objects
- Handling large objects and multiple operations
- Hosting static websites with Amazon S3
- Performing Amazon S3 operations using SDKs

Lab 2: Develop Solutions Using Amazon S3

- Programmatically interacting with Amazon S3 using SDKs and AWS CLI
- Uploading, downloading, and processing S3 objects
- Configuring S3 buckets to host websites and manage access policies

Day 2

Module 7: Getting Started with Databases

- Key components of DynamoDB
- Connecting to DynamoDB and building request objects
- Troubleshooting DynamoDB exceptions

Module 8: Processing Your Database Operations

- CRUD operations with DynamoDB using SDKs
- Developer best practices for DynamoDB access
- Caching options to improve DynamoDB performance

Lab 3: Develop Solutions Using Amazon DynamoDB

- Programmatically interacting with DynamoDB using various APIs
- Retrieving, updating, and searching items in DynamoDB tables
- Accessing DynamoDB data using PartiQL and object-persistence models

Module 9: Processing Your Application Logic

- Developing AWS Lambda functions using SDKs
- Configuring triggers, permissions, and monitoring for Lambda functions

Lab 4: Develop Solutions Using AWS Lambda Functions

- Creating and interacting with Lambda functions using SDKs and AWS CLI
- Integrating Lambda functions with other services
- Deploying and testing Lambda functions

Module 10: Managing the APIs

- Components of API Gateway and integration with AWS services
- Configuring and testing API request and response calls
- Deploying API Gateway resources

Lab 5: Develop Solutions Using Amazon API Gateway

- Creating RESTful API Gateway resources
- Integrating APIs with Lambda functions
- Deploying and validating API Gateway

Day 3

Module 11: Building a Modern Application

- Challenges with traditional architectures
- Benefits of microservices and steps for decoupling monolithic applications
- Orchestrating Lambda Functions using AWS Step Functions

Module 12: Granting Access to Your Application Users

- Evolution of security protocols and authentication with Amazon Cognito
- Managing user access and serverless API authorization
- Integration of Amazon Cognito with JWT tokens

Lab 6: Capstone – Complete the Application Build

- Creating Userpools and Application Clients with Amazon Cognito
- Configuring API Gateway with Cognito for user access
- Verifying application functionality

Module 13: Deploying Your Application

- Risks of traditional software development
- DevOps methodology and deploying serverless applications with AWS SAM

Module 14: Observing Your Application

- Difference between monitoring and observability
- Using CloudWatch Application Insights and AWS X-Ray for application monitoring and debugging

Lab 7: Observe the Application Using AWS X-Ray

- Instrumenting application code for AWS X-Ray
- Analyzing and debugging application behavior with service maps and traces

Module 15: Course Wrap-up

- Summary of course content, AWS training, certifications, and feedback