AWS Certified Solutions Architect – Professional

Course Outline

Day 1

- **Module 1: Reviewing Architecting Concepts**
  - Group Exercise: Review Architecting on AWS core best practices
  - Lab 1: Securing Amazon S3 VPC Endpoint Communications

- **Module 2: Single to Multiple Accounts**
  - AWS Organizations for multi-account access and permissions
  - AWS SSO to simplify access and authentication across AWS accounts and third-party services
  - AWS Control Tower
  - Permissions, access, and authentication

- **Module 3: Hybrid Connectivity**
  - AWS Client VPN authentication and control
  - AWS Site-to-Site VPN
  - AWS Direct Connect for hybrid public and private connections
  - Increasing bandwidth and reducing cost
  - Basic, high, and maximum resiliency
  - Amazon Route 53 Resolver DNS resolution

- **Module 4: Specialized Infrastructure**
  - AWS Storage Gateway solutions
  - On-demand VMware Cloud on AWS
  - Extending cloud infrastructure services with AWS Outposts
  - AWS Local Zones for latency-sensitive workloads
  - Your 5G network with and without AWS Wavelength

- **Module 5: Connecting Networks**
  - Simplifying private subnet connections
  - VPC isolation with a shared services VPC
  - Transit Gateway Network Manager and VPC Reachability Analyzer
  - AWS Resource Access Manager
  - AWS PrivateLink and endpoint services
  - Lab 2: Configuring Transit Gateways

Day 2

- **Module 6: Containers**
  - Container solutions compared to virtual machines
  - Docker benefits, components, solutions architecture, and versioning
  - Container hosting on AWS to reduce cost
  - Managed container services: Amazon ECS and Amazon EKS
  - AWS Fargate
  - Lab 3: Deploying an Application with Amazon ECS on Fargate

- **Module 7: Continuous Integration/Continuous Delivery (CI/CD)**
  - CI/CD solutions and impact
  - CI/CD automation with AWS CodePipeline
  - Deployment models
  - AWS CloudFormation StackSets to improve deployment management

- **Module 8: High Availability and DDoS Protection**
  - Common DDoS attacks layers
  - AWS WAF
  - AWS WAF web access control lists (ACLs), real-time metrics, logs, and security automation
  - AWS Shield Advanced services and AWS DDoS Response Team (DRT) services
  - AWS Network Firewall and AWS Firewall Manager to protect accounts at scale

- **Module 9: Securing Data**
  - What cryptography is, why you would use it, and how to use it
  - AWS KMS
  - AWS CloudHSM architecture
  - FIPS 140-2 Level 2 and Level 3 encryption
  - Secrets Manager

- **Module 10: Large-Scale Data Stores**
  - Amazon S3 data storage management including storage class, inventory, metrics, and policies
  - Data lake vs. data warehouse: Differences, benefits, and examples
  - AWS Lake Formation solutions, security, and control
  - Lab 4: Setting Up a Data Lake with Lake Formation

Day 3

- **Module 11: Large-Scale Applications**
  - What edge services are and why you would use them
  - Improve performance and mitigate risk with Amazon CloudFront
  - Lambda@Edge
  - AWS Global Accelerator: IP addresses, intelligent traffic distribution, and health checks
  - Lab 5: Migrating an On-Premises NFS Share Using AWS DataSync and Storage Gateway

- **Module 12: Optimizing Cost**
  - On-premises and cloud acquisition/deprecation cycles
  - Cloud cost management tools including reporting, control, and tagging
  - Examples and analysis of the five pillars of cost optimization

- **Module 13: Migrating Workloads**

- Business drivers and the process for migration
- Successful customer practices
- The 7 Rs to migrate and modernize
- Migration tools and services from AWS
- Migrating databases and large data stores
- AWS Schema Conversion Tool (AWS SCT)

- **Module 14: Capstone Project**
  - Use the Online Course Supplement (OCS) to review use cases, investigate data, and answer architecting design questions about Transit Gateway, hybrid connectivity, migration, and cost optimization