**Course Outline**

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Introduction

Introduction to Cloud computing

Introduction to private and public cloud

Different types of cloud offerings - IAAS, PAAS and SAAS

AWS Certification

AWS Product and Services

AWS Global Infrastructure and its benefits

AWS Regions

Module 1

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Introduction to EC2

Different types of EC2 instances

When to use a spot instance and when to use a reserve instance (exam tips)

EC2 instance classes

Launching a Linux instance and connecting to it using putty

Launching a windows instance and connecting to it using RDP

Administering EC2 instances - Starting, stopping, rebooting and terminating

Introduction to AMIs

Introduction to Security Groups and it's features

Modifying an EC2 instance

EBS volumes introduction

Upgrading EBS Volume Types

Encrypting Root Device Volume and Create an AMI

EBS Root Device Volumes vs Instance Store

The AWS Command Line and EC2

Installing AWS cli on Windows and connecting through it

Using IAM Roles with EC2

S3 CLI & Regions

Using Bootstrap Scripts (userdata)

How to use EC2 Instance Metadata

Creating a Windows EC2 Instance and RAID Group

EC2 Placement Groups

Module 2

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IDENTITY ACCESS MANAGEMENT (IAM)

Creating users, groups and roles

How to use IAM policies

Restricting access using IAM policies

Basics of identity provides – SAML and Openid connect

Intro to Federated logins

Module 3

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AWS object storage - S3

What is object storage

Difference between object and block storage

Why object storage is so important

S3 bucket creation, uploading an object

Versioning

Hosting a static web site

Life cycle management of objects

S3 security - ACL, bucket policy

S3 MFA deletion, multipart upload

S3 encryption and other security

S3 integration with lambda

S3 Transfer Acceleration

S3 cross region data replication

Managing S3 using cloudberry

Module 4

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CloudFront CDN Overview

Advantages of a CDN network

Creating a CloudFront CDN using s3 origin

Securing a cloudfront

Module 5

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Other storage service offerings of AWS

EFS - elastic file service

Differences between EFS and EBS

Storage Gateway

Comparison among Snowball, snowedge and snowmobile

Module 6

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Basics of cloudwatch

Creating cloudwatch dashboards

Setting up cloudwatch metrics

Creating a self-healing instance with cloudwatch and autoscalling

Cloudwatch events

Cloudwatch logs setup

Difference between cloudwatch and cloudtrail

Module 7

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Basics of ELB - Elastic Load Balancer

Differences among ALB, ELB and NLB

Practical setup of ELB

ELB troubleshooting

Introduction to Auto Scaling

Practical auto scaling setup

ELB with Auto scaling

Module 10

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Introduction to VPC

Why VPC is required

VPC components

Architecting VPC with public and private subnets

Creating VPC using wizards

Creating a manual VPC with Public and private subnets

Network ACL

Difference between NACL and security groups

Launching a web server in the public subnet and connecting it

to the backend database server.

Creating Route tables

Difference between NAT instance and NAT gateway

Installing NAT gateway and NAT instance

What is a Bastion host (jump server)

Launching a bastion host

Module 11

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VPC endpoints

VPC peering

VPN

Module 12

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DATABASES ON AWS

Introduction to RDS

RDS features and different Database offerings

Creating a RDS database and connecting to it using various clients

RDS - Back Ups, Multi-AZ & Read Replicas

Difference between Multi-AZ and Read Replicas

Setting up a Multi-AZ environment using WordPress

Discussion on DynamoDB, concepts, practical’s

RedShift

Elasticache - memecached and redis basics and practical’s

Introduction to Aurora

Module 13

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Introduction to DNS

How DNS works and various DNS components

Route 53 features

Different routing policies

Health checks with Route53

Basics of setting up aliases

Setting up a Failover multi region architecture with Route53

Module 14

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SQS - Introduction to decoupling

SWF

SNS

SES

Elastic Transcoder

Kinesis

Module 15

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Introduction to infrastructure as service

Introduction to CloudFormation with practical’s

Elastic Beanstalk with practical’s

Opsworks

Module 16

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Basics of Elastic Container Services

Introduction to Docker

Why Docker is so popular these days

Docker labs

Introduction to Container orchestration

Implementing ECS

Module 17

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Introduction to serverless computing

Why serverless is so popular

Introduction to microservices

Basics of Lambda

When to use Lambda

Lambda lab with s3 and API gateway

Module 18

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Introduction to API gateway

Integrating API gateway with Lambda

Direct connect

Module 19

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AWS security services: -

Certicate manager, KMS, Inspector

WAF and Shield

CloudHSM

Directory Services

Trusted Advisor

CloudTrail and Config

Module 20

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AWS Risk and Compliance

Shared responsibility model

Architecting for the AWS Cloud

Well Architected framework and it's importance

Module 21

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Exam details

Exam tips and how to pass it

Question and Answer session based on exam practice test