Course Code: BCACT-503	Course Title: Cloud Web Services	L T P C 3 0 0 3

Prerequisites: None

Course Objectives:

1. Introducing cloud computing and Amazon web services.
2. Understanding and using EC2 instances.
3. Deploying and managing applications on AWS cloud.
4. Using AWS security services.
5. Implementing the networking concepts on AWS cloud

UNIT – I: Introduction to Cloud Computing and Amazon Web Services

Introduction to Cloud Computing, Cloud Service Delivery Models (IAAS, PAAS, SAAS), Cloud Deployment Models (Private, Public, Hybrid and Community), Cloud Computing Security, Case Study

Introduction to Amazon Web Services, Why Amazon? Use Cases, AWS Storage Options, AWS Compute Options, AWS Database Options, AWS Workflow Automation and Orchestration Options, AWS Systems Management and Monitoring Options, AWS Virtual Private Cloud Introduction, Pricing Concepts

UNIT – II: Introduction to EC2

Introduction To EC2, Instance Types And Uses, Auto scaling Instances, Amazon Machine Images (AMIS), Modifying Existing Images, Creating New Images of Running Instances, Converting An Instance Store AMI To An EBS AMI, Instances Backed By Storage Types, Elastic IPS, Elastic Load Balancing

UNIT – III: Web Applications and Security

Introduction to Elastic Beanstalk, Deploying Scalable Application On AWS, Selecting And Launching An Application Environment, Provisioning Application Resources with Cloud formation, Introduction to CloudWatch, Describe Amazon Cloud Watch metrics and alarms, AWS Messaging Services(SNS,SQS,SES). Introduction to AWS Security, Describe Amazon Identity and Access Management (IAM), AWS Directory Service, AWS Key Management Service, Securing Data at Rest and In Motion,

UNIT – IV: AWS Storage

Amazon Storage, S3 Storage Basics, Buckets and Objects, Creating A Web Server Using S3 Endpoints, Managing Voluminous Information with EBS, Glacier Storage Service , Describe Amazon Dynamo, Understand key aspects of Amazon RDS, Launch an Amazon RDS instance,

UNIT – V: AWS Networking

Introduction to AWS Networking , Access Control Lists (ACLs), Setting Up a Security Group, Setting Up VPC And Internet Gateway, Setting Up A VPN, Setting Up A Customer Gateway For VPN, Setting Up Dedicated Hardware For VPC, Scenario 1:VPC With A Public Subnet Only (Standalone Web), Scenario 2: VPC with Public And Private Subnets (3 Tier App), Scenario 3:VPC With Public And Private Subnets And Hardware VPN Access (Web On The Cloud, Database and App On Prem) Scenario 4: VPC With A Private Subnet Only And Hardware VPN Access. (Extension Of Your Corporate Network), Route53 for DNS System, Cloud front, Case Study.

TEXTBOOKS:

1. Joe Baron, HishamBaz , Tim Bixler , Biff Gaut , Kevin E. Kelly , Sean Senior , John Stamper , "AWS Certified Solutions Architect Official Study Guide: Associate Exam, John Wiley and Sons Publications, 2017.

REFERENCES BOOKS:

1. YohanWadia , "AWS Certified Solutions Architect Official Study Guide: Associate Exam, John Packt Publishing, 2016
2. Bernald Golden, "Amazon Web Services for Dummies", John Wiley & Sons, 2013

Expected Course Outcomes:

After completion of the course the student will be able:

CO1: To gain fundamental understanding of AWS cloud technologies

CO2: Be able to start a Windows or Linux server in the cloud with its own private address

CO3: Be able to start up a CRM / Word Press / etc. website hosted in cloud

CO4: Be able to start a highly scalable MySQL or Oracle database in the cloud with multiple read-replica databases (for scalability of database)

CO5: Be able to setup a load-balancer in the cloud.