**Name of Faculty:**Moumita Goswami, Prasenjit Das

**Designation:** Assistant Prof., Assistant Prof.

**Department:** CSE

**Subject Name & Stream :** Software Development and IT Operations Lab, *CSE 6th Sem*

**Paper Code :** PC CS 694

**Academic Year & Semester:** 2023-2024, 6th Sem

**Total Number of Lectures/Periods (planned/proposed):** 24

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| **Sl. No.** | **Main Topics** | **Number of Lectures/Periods** |
| 1 | Identity Access Management, Root Account Vs IAM user, Multi-Factor Authentication for Users, IAM Password Policies, Creating Customer Managed Policies,  Glacier Storage, what is Simple Storage Service (S3), Storage Classes, Cross-region replication, Life Cycle Management, Security & Encryption, Static Webhosting with S3 bucket, Events configuration on S3 buckets, Enabling cross-account access for S3, S3 Data management and backup using 3rd Party applications, S3 Cross-Account Access and Pre-Signed URLs Storage Gateway. | 2 |
| 2 | Basics of Linux for AWS, Web Server and Services Configurations,  EC2 Instance Launch Wizard, EC2 Instance Types, Generating custom Public Key and Private keys for EC2 instances, Security groups, Volumes and Snapshots, Creating customized Amazon Machine Images , User.  Data and Metadata, Elastic Load Balancers & Health Checks, Auto Scaling Groups, CloudWatch, Creating Billing Alarm and EC2 instance alarms, AWS CLI&EC2 Roles, Elastic File System, AWS Lightsail, Elastic Beanstalk Placement Groups. | 6 |
| 3 | DNS Records overview Routing Policies, Hosting sample Website and configuring Policies, Simple Routing Policy, Latency Routing Policy Failover Routing Policy Weighted Routing Policy, Geolocation Routing Policy,  Databases, Launching a RDS Instances (MySQL, MSSQL & Aurora), Multi-AZ & Read Replicas for RDS instances, DynamoDB, Redshift, Elastichache, Database Migration Service and Schema conversion tool. | 2 |
| 4 | VPC (Virtual Private Cloud), Networking Basics, Creating custom VPCs and custom Subnets, Network ACL’s, Route Tables & IGW, VPC Peering, Flow log creation VPN Configuration with AWS (OpenVPN).  Security Options, CloudTrail, AWS Config, Key Management Services, AWS Certificate Manager, AWS Trusted Advisor Content Delivery Networks /  CloudFront. | 2 |
| 5 | Application Services, Simple Email Service, Simple Queue Service, Simple Workflow  Service, Simple Notification Service, SMS — Server Migration Service, Migrating server from on-premises to cloud, Cloud Formation, Directory Services and Adding EC2  instance to Domain, AWS TCO Calculator and Simple Monthly calculator. | 2 |
| 6 | Dev0ps Tools Overview, What is Dev0ps in Cloud, Code Pipeline, Code Commit, Code Build, Code Deploy Lambda. | 8 |
| 7 | Monitoring Tools, Creating Custom Metrics with CloudWatch,  Deploy node project in aws. | 2 |

**Signature of the Faculty Member with Date:**

**Signature of HOD with Date:**

**Reviewed by the Dean Academics with Date:**

**Reviewed by the Principal with Date:**