CLOUD COMPUTING SYLLABUS

Cloud Architecture Basics

- Virtualization Concepts
- Hypervisors
- Regions & Availability Zones
- Scalability & Elasticity
- High Availability & Fault Tolerance

Networking in Cloud

- Virtual Networks
- Subnets
- IP Addressing
- Load Balancers
- Gateways
- DNS
- Firewalls & Security Groups

Cloud Storage Services

- Object Storage
- Block Storage
- File Storage

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Cloud Compute Services

- Virtual Machines
- Auto Scaling
- Serverless Computing
- Containers Basics

Identity & Access Management (IAM)

- Users & Roles
- Policies & Permissions
- Authentication vs Authorization
- Multi-Factor Authentication (MFA)
- Least Privilege Principle

Cloud Security (CORE 🔐)

- Shared Responsibility Model
- Data Encryption (At Rest & In Transit)
- Network Security
- Monitoring & Logging
- Compliance Basics

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Containers & Orchestration

- Docker Basics
- Container Images
- Kubernetes Introduction
- Pods, Services & Deployments

DevOps & CI/CD (Cloud Perspective)

- DevOps Overview
- CI/CD Pipelines
- Infrastructure as Code (IaC)
- Monitoring & Logging

Databases in Cloud

- Relational Databases
- NoSQL Databases
- Managed Database Services
- Backup & Scaling

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Cloud Automation & IaC

- Infrastructure as Code Basics
- Terraform Introduction
- Cloud Templates
- Automated Provisioning

Monitoring & Cost Management

- Cloud Monitoring Tools
- Alerts & Logs
- Cost Optimization
- Billing & Budgeting
- Resource Tagging

Cloud Migration

- On-Prem to Cloud Migration
- Migration Strategies (Rehost, Refactor, Rebuild)
- Data Migration
- Post-Migration Optimization

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isaster Recovery & High Availability

- Backup Strategies
- Disaster Recovery Planning
- Multi-region Architecture
- Failover Mechanisms