

CLOUD COMPUTING SYLLABUS

Module 1: Introduction to Cloud Computing

- What is cloud computing
- Evolution of cloud technology
- Benefits of cloud computing
- Types of cloud (Public, Private, Hybrid)
- Cloud service models (IaaS, PaaS, SaaS)

Module 2: Cloud Providers Overview

- Introduction to major providers
- Basics of Amazon Web Services
- Basics of Microsoft Azure
- Basics of Google Cloud Platform
- Comparing cloud platforms

Module 3: Cloud Infrastructure

- Virtual machines
- Storage types (block, file, object storage)
- Networking in cloud
- Load balancing
- Auto scaling

Module 4: Cloud Networking

- Virtual Private Cloud (VPC)
- Subnets and IP addressing
- DNS and routing
- Firewalls and security groups

Module 5: Compute Services

- Virtual servers (EC2, Azure VM)
- Containers and container services
- Serverless computing
- Autoscaling and performance

Module 6: Storage & Databases

- Cloud storage services
- Relational databases
- NoSQL databases
- Data backup and recovery

Module 7: Identity & Access Management (IAM)

- User roles and permissions
- Authentication and authorization
- Multi-factor authentication
- Access policies

Module 8: Cloud Security

- Shared responsibility model
- Data encryption
- Network security
- Security best practices

Module 9: DevOps & Cloud

- Introduction to DevOps
- CI/CD pipelines
- Infrastructure as Code (IaC)
- Automation tools

Module 10: Monitoring & Logging

- Monitoring cloud resources
- Logging systems
- Alerts and notifications
- Performance tracking

Module 11: Serverless Architecture

- Introduction to serverless
- Functions as a Service (FaaS)
- Event-driven architecture
- Use cases

Module 12: Cloud Deployment

- Deploying applications to cloud
- Hosting websites
- Domain configuration
- Scaling applications

Module 13: Cost Management

- Pricing models
- Cost optimization strategies
- Budget monitoring
- Resource optimization

Module 14: Disaster Recovery & Backup

- Backup strategies
- High availability
- Disaster recovery planning
- Data redundancy

Module 15: Cloud Migration

- Migrating applications to cloud
- Lift-and-shift strategy
- Re-architecture
- Migration tools

Module 16: Real-World Projects

- Deploying web application on cloud
- Setting up scalable infrastructure
- Serverless application
- CI/CD pipeline project