Cloud Computing Syllabus

Module 1: Introduction to Cloud Computing

- Definition and Evolution of Cloud Computing
- Characteristics and Benefits of Cloud Computing
- Types of Cloud Computing (Public, Private, Hybrid, Community)
- Cloud Service Models (IaaS, PaaS, SaaS)

Module 2: Cloud Architecture and Deployment

- Cloud Architecture Components
- Virtualization and Its Role in Cloud Computing
- Cloud Deployment Models
- Key Cloud Platforms (AWS, Azure, Google Cloud)

Module 3: Cloud Services and Tools

- Compute Services (Virtual Machines, Containers)
- Storage Services (Object Storage, Block Storage)
- Networking in Cloud (VPC, Load Balancers)
- Cloud Management Tools

Module 4: Security in Cloud Computing

- Cloud Security Challenges
- Data Protection and Encryption in Cloud
- Identity and Access Management (IAM)
- Compliance and Regulatory Issues

Module 5: Applications of Cloud Computing

- Cloud in IoT and Big Data
- Cloud for Machine Learning and AI
- Case Studies of Cloud Implementations

Module 6: Advanced Topics

- Serverless Computing
- Edge Computing
- Multi-cloud and Hybrid Cloud Strategies
- Future Trends in Cloud Computing