Cloud Courses Description

Cloud 101: Fundamental Cloud Computing and Architecture

Cloud Computing Concepts and Models. Fundamental Cloud Architecture. Virtualization Basics. Cloud platforms: IaaS, PaaS, SaaS. Cloud deployment model: Public, private and hybrid clouds. Cloud storage basics. Cloud security basics.

Cloud 102: Cloud Technology and Services

Introduction to cloud services and applications. Cloud service delivery models. Service-Oriented Architecture and the Cloud. Paradigms for developing cloud applications. Cloud migration. Cloud testing.

Cloud 103: Cloud Virtualization

Virtualization concepts. Fundamental virtualization mechanisms and methods. Server virtualization (Hypervisors). Desktop virtualization. Storage virtualization. Network virtualization. Workload and Image deployment. Data storage virtualization. Virtualization performance and reliability. Virtualization standards and open formats**.**

Cloud 104: Cloud Security

Cloud security architecture. Identity and access management. Cloud digital identity. Cloud data security and privacy, Cloud security controls for common threats and attacks. Intrusion detection and incident response. Security in private clouds. Cloud auditing. Cloud security compliance.

Cloud 201: Cloud Databases and Big Data Technology

Cloud database architecture, design and implementation. Big data management. NoSQL database. MapReduce concept. Hadoop platforms.

Cloud 202: Cloud Resource Provisioning and Management

Cloud capacity planning. Cloud scaling and load balancing. Online demands. Resource partitioning and sharding. Cloud storage technologies. Cloud-based backup systems. High reliability and availability models. Performance tuning**.**

Cloud 203: Disaster Recovery and Continuity in the Cloud

Concepts of disaster recovery and business continuity. Backup and archive. Local and remote replication. Cloud storage interoperability. Service level agreement for clouds. Design and implementation of disaster recovery plans.

Cloud 204: Cloud Governance, Risk Management and Auditing

Concept of cloud governance. Risk assessment and management. Cloud security policy. Cloud contracting models. Information governance. Event and incident response. Cloud system and infrastructure lifecycle management. Protection and privacy of cloud assets. Cloud assurance. Cloud control frameworks and standards. SOA governance for the cloud. Legal ethics and cloud use. Cloud related standards.

Cloud Specialist Certificates Courses and Schedule

TERM 1 (12 Weeks)			
Course	**Contents**	**Weekly Schedule**	**Lab**
Cloud 101: Fundamental Cloud Computing and Architecture	Cloud Computing Concepts and Models Data center architecture Fundamental Cloud Architecture Virtualization Basics Cloud platforms: IaaS, PaaS, SaaS. Cloud deployment model: Public, private and hybrid clouds Cloud services and applications Cloud Data Storage Basics Cloud Performance Monitoring Cloud Security Basics Cloud Related Standards	1. Cloud Computing Concepts and Models 2. Fundamental Cloud Architecture 3. Virtualization Basics 4. Cloud Infrastructure Mechanism 5. Private Cloud using OpenStack 6. Private Cloud using CloudStack 7. Microsoft Private Cloud 8. Cloud Data Storage Basics 9. Cloud Performance Monitoring 10. Cloud Security, Compliance, Risk and Governance 11. Cloud Related Standards 12. Business Case Experience Sharing	• VMWare • OpenStack installation and configuration • CloudStack installation and configuration • Microsoft Windows Azure • Cloud system management • Cloud monitoring software
Cloud 102: Cloud Technology and Services	Cloud-Enabling Technology Web 2.0 and clouds Service-oriented architecture and Cloud Cloud Platforms Services Cloud Service Delivery Models Using and Managing IaaS Cloud Services Using and Managing PaaS Cloud Services Exploring services of Amazon Clouds, Google App Engine, Windows Azure Testing and Managing Cloud Migrating to the Cloud Coding Cloud-Based Applications with Google App Engine Mobile and cloud computing	1. Introduction to Cloud-Enabling Technology 2. Web 2.0 and the Cloud 3. Planning and Implementing Cloud Services 4. Using and Managing IaaS Cloud Services 5. Using and Managing PaaS Cloud Services 6. Industry Show Case – Using Microsoft Cloud Services 7. SOA and the Cloud 8. Cloud Middleware 9. Testing and Managing Cloud 10. Working with Mobile Web Services: Windows Phone and Azure 11. Coding Cloud-Based Applications with Google App Engine 12. Migrating to the Cloud	• Amazon Cloud services • Google App Engine services • Windows Azure services • Windows Phones via Azure

TERM 2 (12 Weeks)			
Course	**Contents**	**Weekly Schedule**	**Lab**
Cloud 103: Cloud Virtualization	Virtualization concepts. Fundamental virtualization mechanisms and methods. Server virtualization (Hypervisors). Desktop virtualization. Storage virtualization. Network virtualization. Workload and Image deployment. Data storage virtualization. Virtualization-related reliability, performance and integration. Virtualization standards and open formats.	1. Virtualization Concepts 2. Creating Virtual Machines 3. Exploiting Virtual Workstation Functionality 4. Server Virtualization 5. Desktop Virtualization 6. Storage Virtualization 7. Managing Microsoft Hyper-V 8. Managing VMWare 9. Network Virtualization 10. Application Virtualization 11. Service Virtualization 12. Virtualization Management	• VMWare • Citrix Xen, Xen Cloud • Microsoft HyperV
Cloud 104: Cloud Security	Cloud security architecture. Key management. Identity and access management. Cloud digital identity. Cloud data security. Data privacy, protection, responsibility and accountability. Content level security. Security controls for preventative and reactionary responses to common threats and attacks. Intrusion detection and incident response. Auditing and compliance. Application security. Security in private clouds.	1. Cloud Threats and Vulnerabilities 2. Cloud Security Architecture 3. Virtualization Security 4. Microsoft Hyper V Security 5. Identity and Access Management and Identity as a Service 6. Key Management and Encryption 7. Data Security, Protection, Responsibility and Accountability 8. Privacy Issues in Clouds 9. Incident Response in Clouds 10. Cloud Governance and Risk Management 11. Cloud Auditing and Compliance 12. Cloud Security Standards and Management	• VMWare security • Xen Cloud security • Microsoft HyperV security • Open source identity management software • OpenStack security • CloudStack security • Vulnerability test • Auditing tools • CCSK practice

TERM 3 (12 Weeks)			
Course	**Contents**	**Weekly Schedule**	**Lab**
Cloud 201: **Cloud Databases and Big Data Technology**	Tooling and monitoring system. Redundant storage and storage. Workload management. Load Balanced Virtual Switches and Service Load Balancing. Load Balanced Virtual Servers. Resource reservation.	1. The Evolution of Network Storage 2. Understanding Cloud-Based Storage 3. Cloud-Based Data 4. Cloud-Based Backup System 5. File Systems and Storage Networking Technologies 6. Cloud-Based Data Storage 7. Cloud-Based Databases 8. Cloud-Based Block Storage 9. Software Defined Storage 10. Storage Capacity Optimization 11. Storage Reliability, Availability and Serviceability (RAS) 12. Cloud analytics tools	• Amazon databases • Microsoft SQL Server • MySQL • NoSQL databases • Hadoop
Cloud 202: Cloud Resource Provisioning and Management	Cloud scaling and load balancing. Capacity planning. Designing for scaling. Sharding. Online demands, and load balancing. Resource partitioning. Cloud storage devices, structures, and technologies. Cloud-based data storage and file systems. Cloud-based backup systems. Cloud-based database solutions. Cloud-based block storage**.** High reliability and availability models. Performance tuning.	1. Scaling and Load Balancing in the Cloud 2. Capacity Planning 3. Designing for Scaling: Sharding 4. Designing for On-Demand Capacity: Cloudbursting 5. Designing for Exponentially Cloud Storage 6. Cloud Design Patterns for Load Balancing 7. Resource Provisioning 8. Performance Tuning 9. Example: Amazon Cloud Elastic 10. SOA as a Precursor to Achieving High Reliability at Cloud Scale	• Monitoring tools • Load balancing tools • Performance measurement

TERM 4 (12 Weeks)			
Course	**Contents**	**Weekly Schedule**	**Lab**
Cloud 203: Disaster Recovery and Continuity in the Cloud	Concepts of disaster recovery and business continuity. Backup and archive. Local replication and remote replication. Cloud storage interoperability. Cloud contracting models. Service level agreement for clouds. Planning process for risk assessment. Applying decision trees for disaster recovery plans. Design and implementation of disaster recovery plans.	1. Introduction to Disaster Recovery and Business Continuity 2. Backup and Archive 3. Local Replication 4. Remote Replication 5. Cloud Storage Interoperability 6. Monitoring Cloud Storage Infrastructure and Service Level Agreement 7. Planning Process 8. Using Decision Trees to Design Disaster Recovery Plans 9. Using Decision Trees to Design Business Continuity Plans 10. Case Study: Mapping VMware Product Features to DRP and BCP 11. Implementing Disaster Recovery Plan 12. Disaster Recovery and Business Continuity Standards	
Cloud 204: Cloud Governance, Risk Management and Auditing	Definition of cloud governance precepts, roles, practices, and processes. Common governance challenges and pitfalls specific to cloud computing. Risk management. Policy, risk, and governance for cloud computing. Event and incident response. Risk analysis and division of responsibility. Cloud system and infrastructure lifecycle management. Protection and privacy of information assets in the cloud. Cloud assurance, control frameworks and standards. Risk assessment for cloud migration. SOA government for the cloud. Legal ethics and cloud use.	1. Introduction to Cloud Governance and Risk Management 2. Policy, Risk, and Governance for Cloud Computing 3. Intrusion Detection and Incident Response 4. Risk Analysis and Division of Responsibility 5. System and Infrastructure Lifecycle Management for the Cloud 6. Protection and Privacy of Information Assets in the Cloud 7. Cloud Assurance, Control Framework and Standards 8. Risk Assessment for Cloud Migration 9. SOA Government for the Cloud 10. CSP Agreement and Examples 11. Cloud Morphing 12. Legal Ethics and Cloud Use	