

CTI 14: CLOUD & STORAGE CONCEPTS

COURSE DESCRIPTION:

Prerequisites: None

Corequisites: None

This course introduces cloud computing and storage concepts. Emphasis is placed on cloud terminology, virtualization, storage networking and access control. Upon completion, students should be able to perform tasks related to installation, configuration and management of cloud storage systems

Course Hours per Week: Class, 1 Lab, 4. Semester Hours Credit, 3.

3. Identify cloud computing service models.
- B. Implement a cloud infrastructure.
 1. Implement physical layer components of a cloud storage system.
 2. Implement control layer components of a cloud storage system.
 3. Implement service layer components of a cloud storage system.
- C. Manage a cloud infrastructure.
 1. Describe the service orchestration for a cloud infrastructure.
 2. Describe the business continuity for a cloud infrastructure.
 3. Describe the security for a cloud infrastructure.
 4. Describe service management functions for a cloud infrastructure

- I. Introduction to Cloud Computing
 - A. Essential characteristics of cloud computing
 - B. Cloud service models and cloud service brokerage
 - C. Cloud deployment models

- III. Physical Layer
 - A. Compute system
 - B. Storage system architectures
 - C. Network connectivity

- IV. Virtual Layer
 - A. Virtual layer functions
 - B. Virtualization software
 - C. Resource pool and virtual resources

- V. Control Layer
 - A. Control layer functions
 - B. Control software
 - C. Softwaredefined approach for managing IT infrastructure
 - D. Resource optimization techniques

- VI. Service and Orchestration Layers
 - A. Service layer functions
 - B. Cloud portal
 - C. Cloud interface standards
 - D. Protocols for accessing cloud services
 - E. Service orchestration
 - F. Cloud service lifecycle

- VII. Business Continuity
 - A. Business continuity and service availability
 - B. Fault tolerance mechanisms
 - C. Backup and replication
 - D. Cloud application resiliency

- VIII. Security
 - A. Cloud security threats
 - B. Cloud security mechanisms
 - C. Governance, risk, and compliance

IX. Service Management

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