Miami Dade College

Course Description

CTS2303 | Windows Server Administration | 4.00 credits

This course is intended for students preparing for IT careers as network support specialists as well as server and cloud administrators. Students will learn the fundamental administration skills and knowledge required to deploy and support Windows Server core services. Recommended Preparation: CGS1060C and CTS1134 or equivalent knowledge.

Course Competencies:

Competency 1: The student will demonstrate how to implement servers in host and computer environments by:
1. Identifying Windows Server versions, editions, features, and capabilities
2. Installing, upgrading, and migrating servers and workloads
3. Installing and configuring Nano Server
4. Creating, managing, and maintaining images for deployment

Competency 2: The student will demonstrate how to implement storage solutions by:
1. Configuring disks and volumes using Graphical User Interface (GUI) and Powershell tools
2. Configuring files and sharing access
3. Configuring share and file and folder (NTFS) permissions
4. Implementing server storage
5. Implementing data deduplication

Competency 3: The student will demonstrate how to implement Hyper-V by:
1. Determining hardware and compatibility requirements for Hyper-V installations
2. Installing and configuring Hyper-V
3. Creating virtual machines and configuring settings
4. Configuring dynamic memory, smart paging, and resource metering
5. Differentiating Generation 1 and 2 virtual machines
6. Configuring Hyper-V storage
7. Configuring Hyper-V networking
8. Troubleshoot VM configuration versions

Competency 4: The student will demonstrate how to implement Windows Containers by:
1. Determine installation requirements and appropriate scenarios for Windows Containers
2. Installing and configuring Windows Server container host in physical or virtualized environments
3. Managing Windows containers, container networking
4. container data files and images

Competency 5: The student will demonstrate how to implement high availability by:
1. Implementing Hyper-V Replica, Shared Nothing Live Migration, and storage migration
2. Implementing failover clustering
3. Implementing Storage Spaces Direct
4. Managing failover clustering roles
5. Managing virtual machine (VM) movement in clustered nodes
6. Implementing Network Load Balancing (NLB)

Competency 6: The student will demonstrate how to maintain and monitor server environments by:
1. Configuring Windows Server Update Services (WSUS) server and client settings for patch management
2. Monitoring physical and virtual server performance with Data Collector Sets, alerts, and real-time

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performance
3. Configuring network monitoring
4. Determining backup strategies for different Windows server roles and workloads using native tools and solutions
5. Configuring and managing server backups
6. Recovering servers

Competency 7: The student will demonstrate workplace-readiness skills by:
1. Following oral and written instructions
2. Participating in group discussions as a member and as a leader
3. Demonstrating self-motivation and responsibility to complete an assigned task
4. Choosing appropriate actions in situations requiring effective time management
5. Applying principles and techniques for being a productive, contributing member of a team
6. Identifying and discussing intellectual property rights and licensing issues
7. Identifying and discussing issues contained within professional codes of conduct
8. Using appropriate communication skills, courtesy, manners, and dress in the workplace
9. Documenting problems and solutions in service reports and maintaining support records
10. Performing research on technical issues using Internet and database resources

Learning Outcomes:
- Communicate effectively using listening, speaking, reading, and writing skills
- Formulate strategies to locate, evaluate, and apply information
- Use computer and emerging technologies effectively