Miami Dade College

Course Description

CTS2192C | Microsoft Azure Administration | 4.00 credits

This course is intended for students preparing for IT careers as cloud administrators, as well as candidates for industry certification. Students will learn the administration skills and knowledge required to implement, manage, and monitor identity, governance, storage, and compute virtual networks in the Microsoft Azure cloud environment. Recommended preparation: CTS1145 or equivalent knowledge in Microsoft Azure Fundamentals.

Course Competencies:

Competency 1: The student will demonstrate fundamental knowledge of cloud concepts, Azure services, Azure workloads, security and privacy in Azure, as well as Azure pricing and support by:

1. Describing core cloud computing concepts and how they are implemented in Azure
2. Describing core Azure services. c) Describing core cloud solutions and management tools on Azure
3. Describing general security and network security features
4. Describing identity, governance, privacy, and compliance features. f) Describing Azure cost management and service level agreements

Competency 2: The student will demonstrate how to manage Azure identities and governance in Azure cloud services by:

1. Managing Azure Active Directory (Azure AD) objects, including users, groups, administrative units, guest accounts, and devices
2. Managing role-based access control (RBAC), including creating custom roles and assigning roles at different scopes
3. Managing subscriptions and governance, including policies, resource locks, tags, resources groups, costs, and management groups

Competency 3: The student will demonstrate how to implement and manage storage in Azure cloud services by:

1. Securing storage, including configuring and securing storage accounts, controlling network access, Azure AD authentication, and access keys
2. Managing storage, including tools and techniques for importing, exporting, copying, and replicating data
3. Configuring Azure files and Azure Blob Storage, including Azure file shares, File Sync service, storage tiers, and lifecycle management

Competency 4: The student will demonstrate how to deploy and manage compute resources in Azure cloud services by:

1. Automating deployment of virtual machines (VMs) by using Azure Resource Manager Templates
2. Configuring Virtual Machines (VMs), including high availability features
3. Deploying and configuring virtual machine scale sets
4. Creating and configuring containers in Azure Container Instances and Azure Kubernetes Service
5. Creating and configuring Azure App Services

Competency 5: The student will demonstrate how to configure and manage virtual networking in Azure cloud services by:

1. Implementing and managing virtual networks, including configuring IP addressing, subnets, user-defined network routes, endpoints, and Azure DNS
2. Securing access to virtual networks using effective security rules, network security groups, Azure Firewall, and Azure Bastion

3. Configuring and troubleshooting load balancing and Azure Application Gateway
4. Monitoring and troubleshooting virtual networking, including external and on-premises connectivity
5. Describing integration of an on-premises network with an Azure virtual network using VPN Gateway, ExpressRoute or Virtual WAN

Competency 6: The student will demonstrate how to monitor and back up Azure resources by:

1. Monitoring resources using Azure Monitor, including configuring and interpreting metrics and logs and setting up alerts and actions
2. Implementing backup and recovery using current tools and best practices

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 team member
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:

- Solve problems using critical and creative thinking and scientific reasoning
- Formulate strategies to locate, evaluate, and apply information
- Use computer and emerging technologies effectively