

# **DCOM 162**

## **Foundations of Cloud Technology**

3 Credits

Community College of Baltimore County  
Common Course Outline

### **Description**

**DCOM 162 – Foundations of Cloud Technology:** offers an introduction to the fundamentals of cloud computing, with a focus on cloud architecture, design principles, and the implementation and maintenance of cloud environments. Key topics include virtualization, cloud infrastructure, resource management, and disaster recovery. Students will engage in hands-on activities involving cloud management, deployment, and security across various cloud platforms. They will also learn provision, configuration, and management of cloud resources, with a focus on observability, scaling, and automation. Additionally, the course introduces core DevOps concepts related to cloud deployment. Upon completion, students will be prepared to take the CompTIA Cloud+ certification exam.

**Co-requisites:** DCOM 101

### **Overall Course Objectives**

Upon completion of this course, students will be able to:

1. Explain cloud deployment models such as Public, Private, Hybrid and Community;
2. Identify different cloud architecture models such as Infrastructure as a Code (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS);
3. Demonstrate the ability to provision cloud resources such as storage and network services;
4. Describe cloud infrastructure components, virtualization, storage, networking and security;
5. Configure appropriate resources in cloud system to achieve observability such as logging and monitoring;
6. Implement backup and recovery methods of cloud systems;
7. Implement identity and access management in cloud systems;
8. Apply security controls in the cloud;
9. Monitor suspicious activities to identify common attacks in the cloud systems;
10. Explain concepts related to continuous integration and continuous deployment (CI/CD) pipelines;
11. Identify the tools used in DevOps environments; and
12. Investigate the methodologies to troubleshoot in the cloud systems.

### **Major Topics**

- I. Cloud deployment model
- II. Cloud architecture models
- III. Cloud resources, storage, and network services

The Common Course Outline (CCO) determines the essential nature of each course.

For more information, see your professor's syllabus.

- IV. Cloud infrastructure components, virtualization, storage, networking, and security
- V. Resources in the cloud system to achieve observability
- VI. Backup and recovery methods of cloud systems
- VII. Access management for cloud systems
- VIII. Security controls for the cloud
- IX. Continuous integration and continuous deployment pipelines
- X. Tools used in DevOps environments

### **Course Requirements**

Grading will be determined by the individual faculty member, but shall include the following, at minimum:

- Five lab assignments
- Two exams

### **Other Course Information**

This course prepares the students to take CompTIA Cloud+ certification.

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