

SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Computer Information Technology Program
Revision Date: December 2024

I. CATALOG DESCRIPTION

Course Number: INFO2576
Course Title: Virtualization and Cloud Management
Prerequisite(s): INFO1494, ELEC2760
Catalog Description: This course introduces the fundamentals and skills necessary to manage virtual and cloud computing platforms, including Type 1 and Type 2 hypervisors, Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP) public cloud environments.
Credit Hours: 3
Class Hours: 45
Lab Hours: 0
Total Contact Hours: 45

II. COURSE OBJECTIVES: *Course will:*

- A. Provide the foundation for implementing and managing a virtual environment.
- B. Initiate the examination of cloud-based hardware resources, networking and connectivity, storage, and Identity and Access Management (IAM).
- C. Provide opportunities to work in Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP) environments.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Explain cloud computing concepts and compare cloud deployment models.
 - 2. Deploy virtualization technologies using Type 1 and Type 2 hypervisors and Virtual Machine (VM) configurations.
 - 3. Describe networking services found in local and public cloud platforms.
 - 4. Recognize cloud-based security weaknesses and employ security strategies.
 - 5. Explain options for managing authorization, permissions, and access controls to cloud resources.
 - 6. Demonstrate an understanding of common storage technologies and configurations.
 - 7. Explain monitoring techniques and address common performance and capacity issues.
 - 8. Employ cloud automation techniques including Infrastructure as Code (IaC) technologies.
- B. General Education Learning Outcomes (GELOs)
 - 1. GELO #3: Critical Thinking & Problem Solving
Outcome 2: Synthesize information to arrive at reasoned solutions to problems.

IV. CONTENT/TOPICAL OUTLINE

- A. Introduction to Cloud Computing
- B. Virtual Hardware
- C. Migration to the Cloud
- D. Cloud Networking
- E. Cloud Connectivity and Troubleshooting
- G. Securing Cloud Resources

- H.** Identity and Access Management
- I.** Cloud Storage
- J.** Managing Cloud Performance
- K.** Common Administrative Tasks
- L.** Cloud Automation

V. INSTRUCTIONAL MATERIALS

Classroom Course:

- A.** Required Text(s): Jill West, *CompTIA Cloud+ Guide to Cloud Computing Second Edition*
- B.** Other Resources: Computer and Internet Access

VI. METHODS OF PRESENTATION/INSTRUCTION

- A.** Methods of presentation typically include a combination of the following:
 - 1.** Course material presented in a web-based training format
 - 2.** Group discussions
 - 3.** Engaged learning activities

VII. METHODS OF EVALUATION

- A.** Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:
 - 1.** Online discussion activities
 - 2.** Hands-On Learning assignments
 - 3.** Quizzes and examinations

VIII. SPECIFIC COURSE REQUIREMENTS

- A.** This course will not qualify as a prerequisite if the student receives a final grade below a "C" (70%).