CLOUD COMPUTING, CERTIFICATE OF PROFICIENCY (CCCP)

Effective: Fall 2023

The Cloud Computing certificate program will prepare students for employment in Cloud Computing fields such as Cloud Administration, Cloud Development, Security, Architecture, Data, DevOps, and Machine Learning. The material presented in the Cloud Computing certificate program will provide students with the knowledge and skills necessary to successfully deploy and manage cloud services and systems including virtualized computing, storage, networking, database, and security and governance of these services.

Courses taken in this certificate program specifically relate to and will help prepare students for the following industry certification exams: AZ-900 Microsoft Azure Fundamentals, AZ-104 Microsoft Azure Administrator, and AWS Certified Cloud Practitioner.

The Cloud Computing certificate offers general cloud computing training plus the flexibility of tailoring part of the curricula to match one of two professional pathways: Cloud Engineer/Architect and Cloud Software Developer.

Cloud Engineer/Architect:

The cloud architect designs and implements a company's cloud computing strategies. They ensure that everything stays on track, on budget and that the company's transition to cloud operations goes smoothly. Cloud engineers are responsible for the managerial aspects of a company's cloud strategies. Engineers often work alongside architects to ensure a company's cloud strategies are implemented.

Cloud Software Developer: Cloud software engineers work with programmers and related computer scientists to develop software that operates in the cloud. Popular languages for Cloud Development include Python, Java, PHP, and JavaScript, as well as knowledge and experience with database technologies.

Program Outcomes

Upon successful completion of this program, students should be able to:

- Configure, deploy, and manage Cloud services including compute, networking, storage, database, security and application services.
- Explain Cloud concepts in terms of economics and design principles.
- Provision and manage cloud resources utilizing Azure portal, AWS console, and Azure and AWS command-line interfaces.
- Define and design for security and compliance.
- Design high-performing, resilient, secure and cost-optimized architecture.

Full-Time Academic Plan

The College will award a certificate of proficiency to students who complete 30 credits of an approved career program. These credits will not normally include physical education, developmental, basic and/or continuing education courses and will usually consist of 24 credits in the career specialty and six credits in general education. At least 15 of the credits must be earned at Delaware County Community College. The student must have a cumulative GPA of 2.0 or higher.

First Semester		**Hours**
CS 101	Introduction to Computer Science	3
CS 113	Database Management Systems	3
NET 110	Network Communications	3
NET 116	Microsoft Hybrid Server: Core Infrastructure	4
	Hours	**13**
Second Semester		
CS 142	Introduction to Cloud Computing Concepts and Administration using Microsoft Azure	3
CS 143	Introduction to Cloud Computing Concepts and Administration using Amazon Web Services	3
NET 230	Linux Operating Systems I	4
Elective by Pathway		**3-4**
Cloud Software Developer Pathway Select One:		
CS 102	Introduction to Python	
CS 104	Introduction to Java Programming	
CS 202	Intermediate Python	
CS 204	Intermediate Java Programming	
CS 212	Data Structures and Algorithms	
CS 214	jQuery/JavaScript	
CS 240	Responsive Web Design	
Cloud Engineer/Architect Pathway Select One:		
NET 142	Cyber and Network Security Concepts	
NET 231	Microsoft Hybrid Server II	
	Hours	**13-14**
Third Semester		
CS 242	Azure Cloud Architect Technologies	3
CS 243	Amazon AWS Cloud Solutions Architecture	3
	Hours	**6**
	Total Hours	**32-33**

Part-Time Academic Plan

The College will award a certificate of proficiency to students who complete 30 credits of an approved career program. These credits will not normally include physical education, developmental, basic and/or continuing education courses and will usually consist of 24 credits in the career specialty and six credits in general education. At least 15 of the credits must be earned at Delaware County Community College. The student must have a cumulative GPA of 2.0 or higher.

Course	Title	Hours
First Semester		
CS 101	Introduction to Computer Science	3
CS 113	Database Management Systems	3
NET 110	Network Communications	3
	Hours	**9**
Second Semester		
CS 142	Introduction to Cloud Computing Concepts and Administration using Microsoft Azure	3
CS 143	Introduction to Cloud Computing Concepts and Administration using Amazon Web Services	3
NET 116	Microsoft Hybrid Server: Core Infrastructure	4
	Hours	**10**
Third Semester		
NET 230	Linux Operating Systems I	4
Elective by Pathway		**3-4**
Cloud Software Developer Pathway, Select One:		
CS 102	Introduction to Python	

CS 104	Introduction to Java Programming	
CS 202	Intermediate Python	
CS 204	Intermediate Java Programming	
CS 212	Data Structures and Algorithms	
CS 214	jQuery/JavaScript	
CS 240	Responsive Web Design	
Cloud Engineer/Architect Pathway, Select One:		
NET 231	Microsoft Hybrid Server II	
NET 142	Cyber and Network Security Concepts	
	Hours	**7-8**
Fourth Semester		
CS 242	Azure Cloud Architect Technologies	3
CS 243	Amazon AWS Cloud Solutions Architecture	3
	Hours	**6**
	Total Hours	**32-33**

Career