CLOUD COMPUTING, ASSOCIATE IN APPLIED SCIENCE (CSCC)

Effective: Fall 2023

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

Courses taken in this degree program specifically relate to and will help prepare students for the following industry certification exams; Microsoft Azure Fundamentals, Microsoft Azure Administrator, Microsoft Azure Architect Technologies, AWS Cloud Practitioner, and AWS Solutions Architect.

The Cloud Computing degree 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

- 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 architectures.

Full-Time Academic Plan

First Semester		Hours
CS 101	Introduction to Computer Science	3
ENG 100	English Composition I	3
IMM 120	Web Page Design and Development	3
NET 110	Network Communications	3
Any Quantitative Reasoning (QR) designated MAT course [1]		3-4
	Hours	**15-16**
Second Semester		
CS 113	Database Management Systems	3
CS 142 or CS 143	Introduction to Cloud Computing Concepts and Administration using Microsoft Azure or Introduction to Cloud Computing Concepts and Administration using Amazon Web Services	3
NET 116	Microsoft Hybrid Server: Core Infrastructure	4
NET 230	Linux Operating Systems I	4
Any Oral Communications (OC) designated course		3
	Hours	**17**
Third Semester		
CS 142 or CS 143	Introduction to Cloud Computing Concepts and Administration using Microsoft Azure or Introduction to Cloud Computing Concepts and Administration using Amazon Web Services	3
CS 242 or CS 243	Azure Cloud Architect Technologies or Amazon AWS Cloud Solutions Architecture	3
ENG 112	English Composition II: Writing About Literature	3
Any Diversity and Social Justice (DJ) AND Global Understanding (GU) designated course		3
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	**15-16**
Fourth Semester		
CS 242 or CS 243	Azure Cloud Architect Technologies or Amazon AWS Cloud Solutions Architecture	3
Any Scientific Inquiry (SI) designated course		4
Mathematics Elective [2]		3-4
Electives by Pathway		**3-4**
Cloud 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 Architect Pathway Select One		
NET 142	Cyber and Network Security Concepts	
NET 231	Microsoft Hybrid Server II	
	Hours	**13-15**
	Total Hours	**60-64**

Notes:

Quantitative Reasoning (QR) designated courses (https://catalog.dccc.edu/academic-programs/college-academic-learning-goals/#QR_Course_List)[1]

[1] not MAT 125

Oral Communications (OC) designated courses
Diversity and Social Justice (DJ) AND Global Understanding (GU) designated courses
Scientific Inquiry (SI) designated courses
Mathematics Elective

[2] MAT 120 or higher (not MAT 125 or MAT 126)

Part-Time Academic Plan

Course	Title	Hours
First Semester		
CS 101	Introduction to Computer Science	3
ENG 100	English Composition I	3
IMM 120	Web Page Design and Development	3
	Hours	**9**
Second Semester		
CS 113	Database Management Systems	3
NET 110	Network Communications	3
Any Quantitative Reasoning (QR) designated MAT course [1]		3-4
	Hours	**9-10**
Third Semester		
CS 142/143	Introduction to Cloud Computing Concepts and Administration using Microsoft Azure	3
NET 116	Microsoft Hybrid Server: Core Infrastructure	4
Any Oral Communications (OC) designated course		3
	Hours	**10**
Fourth Semester		
CS 142 or CS 143	Introduction to Cloud Computing Concepts and Administration using Microsoft Azure or Introduction to Cloud Computing Concepts and Administration using Amazon Web Services	3
NET 230	Linux Operating Systems I	4
ENG 112	English Composition II: Writing About Literature	3
	Hours	**10**
Fifth Semester		
CS 242 or CS 243	Azure Cloud Architect Technologies or Amazon AWS Cloud Solutions Architecture	3
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	
Any Diversity and Social Justice (DJ) AND Global Understanding (GU) designated course		3
	Hours	**9-10**
Sixth Semester		
Electives by Pathway		**3-4**
Cloud 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 Developer Pathway, Select One:		
NET 142	Cyber and Network Security Concepts	
NET 231	Microsoft Hybrid Server II	
Any Scientific Inquiry (SI) designated course		4
	Hours	**7-8**
Seventh Semester		
CS 242 or CS 243	Azure Cloud Architect Technologies or Amazon AWS Cloud Solutions Architecture	3
Mathematics Elective [1]		3-4
	Hours	**6-7**
	Total Hours	**60-64**

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[1] not MAT 125

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Diversity and Social Justice (DJ) AND Global Understanding (GU) designated courses
Scientific Inquiry (SI) designated courses
Mathematics Elective

[2] MAT 120 or higher (not MAT 125 or MAT 126)

Career