Course Number and Title: ITN 255 Cloud Computing

Campus Location:
Georgetown, Dover, Stanton, Wilmington

Effective Date:
2021-51

Prerequisite:
ITN 251

Co-Requisites:
None

Course Credits and Hours:
3.00 credits
2.00 lecture hours/week
2.00 lab hours/week

Course Description:

This course provides the essential knowledge and skills required to comprehend standard cloud terminologies and methodologies. Students implement, maintain, and deliver cloud technologies and infrastructures while applying industry best practices related to cloud implementations and adoption, the application of virtualization, and IT security.

Required Text(s):
Obtain current textbook information by viewing the campus bookstore - https://www.dtcc.edu/bookstores online or visit a campus bookstore. Check your course schedule for the course number and section.

Additional Materials:
Access to high speed Internet.

Schedule Type:
Classroom Course
Video Conferencing
Web Conferencing
Hybrid Course
Online Course

Disclaimer:
None

Core Course Performance Objectives (CCPOs):

1. Differentiate among cloud concepts and services. (CCC 1, 2, 3, 6; PGC 1, 3, 4)
2. Create and administer virtual components. (CCC 1, 2, 3, 6; PGC 1, 3)
3. Provision advanced storage components. (CCC 1, 2, 3; PGC 1, 3)
4. Provision networking components. (CCC 1, 2, 3; PGC 1, 3)
5. Apply resource management best practices. (CCC 1, 2, 3; PGC 1, 2, 3)
6. Apply fundamentals of security concepts in virtual environments. (CCC 1, 2, 3, 6; PGC 1, 3)
7. Create a business case for cloud adoption. (CCC 1, 2, 3; PGC 1, 3, 4, 5)

See Core Curriculum Competencies and Program Graduate Competencies at the end of the syllabus. CCPOs are linked to every competency they develop.

Measurable Performance Objectives (MPOs):
Upon completion of this course, the student will:

1. Differentiate among cloud concepts and services.
    1. Compare and contrast cloud services.
    2. Compare and contrast cloud delivery models and services.
    3. Explain object storage concepts.
    4. Identify solutions to meet availability requirements.
2. Create and administer virtual components.
    1. Differentiate between hypervisor types.
    2. Configure and administer virtual machines and devices.
    3. Perform virtual resource migration.
    4. Describe the benefits of virtualization in a cloud environment.
    5. Compare and contrast virtual components used to construct a cloud environment.
3. Provision advanced storage components.
    1. Compare and contrast various storage technologies.
    2. Apply storage configuration concepts.
    3. Execute storage provisioning.
    4. Explain common hardware resources and features used to enable virtual environments.
4. Provision networking components.
    1. Implement appropriate network configurations.
    2. Optimize network services.
    3. Troubleshoot network connectivity issues.
5. Apply resource management best practices.
    1. Explain service level agreements (SLA) as they relate to a cloud environment.
    2. Apply proper resource monitoring techniques.
    3. Allocate physical host resources.
    4. Allocate guest resources.
    5. Use appropriate tools for remote access.
6. Apply fundamentals of security concepts in virtual environments.
    1. Configure network services using best security practices.
    2. Configure storage systems using best security practices.
    3. Apply encryption technologies and methods.
    4. Apply access control methods.
    5. Implement guest and host hardening techniques.
    6. Compare and contrast disaster recovery methods and concepts.
7. Create a business case for cloud adoption.
    1. Analyze the risks and benefits of cloud adoption.
    2. Evaluate different models of cloud adoption.
    3. Present a business case for cloud adoption.

Evaluation Criteria/Policies:
The grade will be determined using the Delaware Tech grading system:

90	–	100	=	A
80	–	89	=	B
70	–	79	=	C
0	–	69	=	F

Students should refer to the Student Handbook - https://www.dtcc.edu/handbook for information on the Academic Standing Policy, the Academic Integrity Policy, Student Rights and Responsibilities, and other policies relevant to their academic progress.

Final Course Grade:
Calculated using the following weighted average

Evaluation Measure	Percentage of final grade
Discussions (Formative)	15%
Quizzes (Formative)	10%
Labs (4 Total) (Summative)	15%
2 Exams (Summative)	30%
Final Project (Summative)	30%
TOTAL	100%

Core Curriculum Competencies (CCCs are the competencies every graduate will develop):

1. Apply clear and effective communication skills.
2. Use critical thinking to solve problems.
3. Collaborate to achieve a common goal.
4. Demonstrate professional and ethical conduct.
5. Use information literacy for effective vocational and/or academic research.
6. Apply quantitative reasoning and/or scientific inquiry to solve practical problems.

Program Graduate Competencies (PGCs are the competencies every graduate will develop specific to his or her major):

1. Solve technology-related problems using critical thinking and troubleshooting skills.
2. Articulate the role of the technology professional in organizations to support the ethical use of information technology.
3. Apply fundamental security concepts and strategies for maintaining and securing information technology.
4. Read and interpret technical information and effectively communicate to a wide range of audiences using oral, print, and multimedia strategies.
5. Demonstrate the importance of lifelong learning that empowers personal and professional growth.

Disabilities Support Statement:
The College is committed to providing reasonable accommodations for students with disabilities. Students are encouraged to schedule an appointment with the campus Disabilities Support Counselor to request an accommodation needed due to a disability. A listing of campus Disabilities Support Counselors and contact information can be found at the disabilities services - https://www.dtcc.edu/disabilitysupport web page or visit the campus Advising Center.