DELAWARE
TECHNICAL ◆ COMMUNITY
COLLEGE

Course Number and Title: CEN 222 Windows Operating System

Campus Location:
Dover

Effective Date:
2018-51

Prerequisite:
CEN 120

Co-Requisites:
None

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

Course Description:
This course is designed to teach the student about the installation, configuration, and maintenance of Windows, both the workstation and server versions. It will cover Windows peer-to-peer networking capabilities and its integration with other network environments, including the World Wide Web.

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:
USB flash drive for lab work and broadband internet access

Schedule Type:
Classroom Course
Online Course

Disclaimer:
None

Core Course Performance Objectives (CCPOs):

1. Distinguish between the tools, techniques, and the best practices for role-based Windows Server administration. (CCC-1, 2, 3, 5, 6; PGC-1, 2, 3)
2. Design effective group policies to secure Windows Server using appropriate tools, techniques, and the best practices. (CCC-1, 2, 3, 5, 6; PGC-1, 2, 3)
3. Design a Windows Server with Update Services (WSUS) using appropriate tools, techniques, and the best practices. (CCC-1, 2, 3, 5, 6; PGC-1, 2, 3)
4. Distinguish between the tools, techniques, and the best practices to maintain a high- availability environment. (CCC-1, 2, 3, 5, 6; PGC-1, 2, 3)
5. Demonstrate the tools, techniques, and the best practices to improve Windows Server performance. (CCC-1, 2, 3, 5, 6; PGC-1, 2, 3)
6. Explain how to virtualize Windows Server using appropriate tools, techniques, and the best practices. (CCC-1, 2, 3, 5, 6; PGC-1, 2, 3)
7. Demonstrate the tools, techniques, and the best practices to troubleshoot Windows Server. (CCC-1, 2, 3, 5, 6; PGC-1, 2, 3)
8. Demonstrate the basic theoretical and practical knowledge necessary to successfully take Microsoft Windows Server 2008 (Exam 70-646) certification examination. (CCC-1, 2, 5, 6; PGC-1, 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. Distinguish between the tools, techniques, and the best practices for role-based Windows Server administration.
    1. Compare the different available Window Server roles.
    2. Demonstrate and configure remote administration.
    3. Demonstrate controlling resources with Server Manager.
2. Design effective group policies to secure Windows Server using appropriate tools, techniques, and the best practices.
    1. Demonstrate security baseline analysis using Microsoft Baseline Security Analyzer.
    2. Produce custom templates with Security Configuration Wizard.
    3. Demonstrate effective security policies.
    4. Produce security templates with the Security Configuration and Analysis tool.
    5. Explain integrating local and Active Directory policies.
3. Design a Windows Server with Update Services (WSUS) using appropriate tools, techniques, and the best practices.
    1. Explain how to manage the WSUS catalog.
    2. Demonstrate how to configure WSUS components.
    3. Explain how to prepare clients using Group Policy.
    4. Explain how to authorize and distribute patches to clients.
4. Distinguish between the tools, techniques, and the best practices to maintain a high- availability environment.
    1. Plan a fault-tolerant server implement.
    2. Explain how fail-over clustering can ensure business continuity.
    3. Explain how to analyze cluster models for optimal architectures.
    4. Demonstrate how to replicate with the Distributed File System.
5. Demonstrate the tools, techniques and the best practices to improve Windows Server performance.
    1. Demonstrate monitoring applications with the Reliability and Performance Monitor.
    2. Demonstrate the use of essential system counters.
    3. Explain how to optimize servers using the Windows System Resource Manager.
    4. Explain how to isolate the causes of Windows Server performance problems.
6. Explain how to virtualize Windows Server using appropriate tools, techniques, and the best practices.
    1. Compare the different virtualization methods including their benefits and limitations.
    2. Explain how to improve resource utilization using a hypervisor such as Hyper-V.
    3. Explain how virtualizing servers can improve their availability.
    4. Demonstrate the use of several server virtualization methods.
7. Demonstrate the tools, techniques, and the best practices to troubleshoot Windows Server.
    1. Demonstrate how to locate Registry problems.
    2. Demonstrate how to back-up and to restore the Registry.
    3. Explain how to recover from driver failures.
    4. Explain how to recover from common failures.
    5. Explain how to repair partition tables and the boot configuration data store.
8. Demonstrate the basic theoretical and practical knowledge necessary to successfully take Microsoft Windows Server 2008 (Exam 70-646) certification examination.
    1. Demonstrate an understanding of the exam's design and scoring criteria.
    2. Demonstrate an acceptable score using approved test simulation and practice software.

Evaluation Criteria/Policies:
Students must demonstrate proficiency on all CCPOs at a minimal 75 percent level to successfully complete the course. The grade will be determined using the Delaware Tech grading system:

92	–	100	=	A
83	–	91	=	B
75	–	82	=	C
0	–	74	=	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.

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. Apply techniques, skills and usage of modern tools of a Computer Network Engineering Technician.
2. Apply analysis tools and problem-solving methods learned in the mathematics, sciences and electrical/electronics courses to conduct, interpret and analyze experiments.
3. Use critical thinking in the design or improvement of quality systems, components or processes.
4. Employ oral and written communication techniques as an integral member of a multidisciplinary work team.
5. Adhere to professional, ethical, and social issues in a diverse workplace.
6. Perform basic management and leadership skills, which will include time management and organization in the Computer Engineering Technology.

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](https://www.dtcc.edu/disabilitysupport) web page or visit the campus Advising Center.