



Course Number and Title: CNE 280 Advanced Networking Topics

Campus Location:

Georgetown, Dover, Wilmington

Effective Date:

2018-51

Prerequisite:

CNE 215, CNE 216

Co-Requisites:

None

Course Credits and Hours:

3.00 credits

2.00 lecture hours/week

3.00 lab hours/week

Course Description:

This course covers advanced topics in network design and implementation to include real-world tasks related to the field of networking.

Required Text(s):

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

Additional Materials:

None

Schedule Type:

Classroom Course

Disclaimer:

None

Core Course Performance Objectives (CCPOs):

1. Diagram and implement network design. (CCC 2, 3; PGC 1, 2, 3)
2. Install and configure server and desktop operating systems (OS). (CCC 1, 2, 3; PGC 2, 3, 4, 5)
3. Set up network services. (CCC 3; PGC 1, 3, 4, 5, 6)
4. Configure firewall settings, and maintain network security. (CCC 3, 4; PGC 1, 2, 3, 4, 5)
5. Configure and implement intrusion detection/prevention systems (IDS/IPS). (CCC 2, 3, 4; PGC 1, 2, 3, 4, 5, 6)

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. Diagram and implement network design.
 1. Plan network topologies.
 2. Construct network diagram(s).
 3. Configure network routers and switches.
2. Install and configure server and desktop operating systems (OS).
 1. Determine the appropriate operating systems.
 2. Install operating systems.
 3. Configure client computers and servers.
3. Set up network services.
 1. Determine the appropriate network services to deploy.
 2. Install and configure network services.
4. Configure firewall settings to maintain network security.
 1. Determine the network access policies.
 2. Implement firewall rules that reflect an organization's overall security approach.
 3. Enable secure remote access.
5. Configure and implement intrusion detection/prevention systems (IDS/IPS).
 1. Determine the advantages and disadvantages of implementing IDS and IPS.
 2. Configure an IDS and an IPS system.
 3. Configure remote notification service of security alerts.

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](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 the modern tools of a Computer Network Engineering Technician.
2. Apply analysis tools and problem-solving methods learned in the mathematics, computer, and electrical/electronic courses to troubleshoot network problems.
3. Diagnose and resolve network issues.
4. Install, configure, administer and troubleshoot network services for file access and storage, web-content hosting, network communications, network gateways and proxies, and security services on networking servers.
5. Design, install, configure and operate Wide Area Networks (WAN) and Local Area Networks (LAN).
6. Explain the functions and the workings of common communications protocols, and how such protocols are developed by standards organizations.

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.