



Course Number and Title: ISY 201 Advanced Operating Systems

Campus Location:

Georgetown, Dover, Wilmington

Effective Date:

2018-51

Prerequisite:

CNE 192

Co-Requisites:

None

Course Credits and Hours:

3.00 credits

2.00 lecture hours/week

2.00 lab hours/week

Course Description:

This course covers advanced topics in computer operating systems and their design implementation. Topics include portable operation systems, mobile operation systems, virtual memory management, file systems, parallel computing, and virtualization.

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. Compare mobile operating systems, including the features, security issues, and management of those operating systems. (CCC 4, 5; PGC 1, 3, 5, 7, 8)
2. Create and customize portable operating systems to resolve system issues. (CCC 2, 3, 4,5; PGC 3, 4, 5, 9)
3. Discuss how desktop and server personal computers use virtual memory management, parallel computing, and other features. (CCC 1, 2, 6; PGC 5, 9)
4. Apply industry standards for desktop and server virtualization. (CCC 2, 3, 5; PGC 1, 2,3)
5. Configure server file systems, and implement file system security. (CCC 2, 3, 4, 5; PGC 1, 2, 3, 5, 9)

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. Compare mobile operating systems, including the features, security issues, and management of those operating systems.
 1. Compare and contrast the function of a mobile operating system to a desktop operating system.
 2. Identify security issues unique to mobile devices in the enterprise.
 3. Explore alternate operating systems for a given device.
2. Create and customize portable operating systems to resolve system issues.
 1. Create a live disk.
 2. Examine a host system.
 3. Modify an operating system to resolve issues.
3. Discuss how desktop and server personal computer use virtual memory, management, parallel computing, and other features.
 1. Explain the function of the swap area.
 2. Describe the process of loading a program into memory, allocating memory space, and managing the virtual memory space of all running processes.
 3. Explain the impacts of parallel computing on virtual memory management.
4. Apply industry standards for desktop and server virtualization.
 1. Install and configure a virtual machine (VM) image on a host computer.
 2. Configure a virtual file system on a host computer.
 3. Resolve common issues related to VM architecture.
5. Configure server file systems, and implement file system security.
 1. Recognize the differences among file system types.
 2. Explain the function of a journaling file system.
 3. Design and build server file systems.
 4. Recognize file system constraints.

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. Identify and remediate vulnerabilities.
2. Design, plan, and install network systems.
3. Install and configure operating systems.
4. Demonstrate the ability to write and debug scripts.
5. Demonstrate professionalism and ethical responsibility.
6. Communicate effectively to diverse groups of stakeholders.
7. Perform change management analysis and documentation.
8. Perform evidence collection and forensics analysis.
9. Create, modify, and/or implement security policies.

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.