

CSCI 425 – Network Systems Operations and Administration

Spring 2020 - Section ii1

Instructor: Jason Patalon
Office: Ross Hall 145
jpatalon@edinboro.edu

Class Info: Tuesday's and Thursday's 7:30 – 8:30 pm
Ross Hall 136

Office Hours: Tuesday's and Thursday's 5:15 – 6:00 pm
Ross Hall 136/145

Course Websites

D2L: Lecture notes, readings, announcements, class files, and **grades**. Log on at my.edinboro.edu
jpatalon.cs.edinboro.edu – Lecture notes, readings, announcements, and class files.

Course Description

This course introduces students to the principles and practices of operating a small to medium sized network of computers. Topics include network services to support user accounts in a networked system. Network hardware installation and support is also discussed. Students will install and configure systems and services related to the topics discussed on multiple operating systems. Issues involving operating system interoperability and security will be explored. Prerequisites CSCI 310 and CSCI 325.

Course Objectives

1. Demonstrate a working knowledge of the theoretical foundation of network services.
2. Install, configure and deploy network operating systems and their services.
3. Demonstrate a basic understanding of network system security.

Course Materials

Required textbook: Linux Administration: A Beginners Guide, Seventh Edition, 2016
ISBN: 978-0071845366

Recommended Textbook: The Practice of System and Network Administration, Third Edition, 2016
ISBN: 978-0321919168

Recommended: 8GB or larger USB flash drive.

Attendance

Regular and punctual attendance is expected. This course will follow attendance guidelines set forth in the Class Attendance Policy and Procedure section of the university catalog. Any in-class exercises must be done in class and are not available for make-up.

Title IX Reporting Requirements

Edinboro University and its faculty are committed to assuring a safe and productive educational environment for all students. In order to meet this commitment and to comply with Title IX of the Education Amendments of 1972 and guidance from the Office for Civil Rights, the University requires faculty members to report incidents of sexual violence shared by students to the University's Title IX Coordinator. Information regarding the reporting of sexual violence and the resources that are available to victims of sexual violence is set forth at: <http://www.edinboro.edu/directory/offices-services/social-equity/sex-discrimination-sexual-misconduct>.

Technology Use

The use of cell phones or other communication devices during class is disruptive to the learning environment and prohibited from use during class. If there is an emergency which requires immediate attention, students must leave the classroom to take any calls.

Grading Policy

Grades will be given according to the following breakdown:

<u>Description</u>	<u>Percentage</u>	<u>Total Points</u>
Attendance	6%	75
Midterm Exam	20%	250
Final Exam	20%	250
Presentation	24%	300
Assignments/System Checks	30%	375
Total Points		1250

Grading Scale

Percentage	Grade	Percentage	Grade
90.0-100.0	A	70.0-76.9	C
87.0-89.9	B+	67.0-69.9	D+
80.0-86.9	B	60.0-66.9	D
77.0-79.9	C+	0-59.9	F

Course Policies

- Attendance will be taken randomly during class, and may be taken multiple times during the same class.
- Disruptive behaviors, including but not limited to excessive talking, arriving late, sleeping, or using unauthorized electronic devices during class is counterproductive to the learning environment and not permitted. Repeat offenders may be administratively withdrawn according to university policy.
- Do your own work! There is no tolerance for cheating or plagiarism. Students engaged in dishonest academic activity may receive a lower or failing grade, or other academic sanctions including suspension or expulsion.
- Turn in all homework on time. Late homework assignment submissions are not accepted. Homework assignments are due at the end of the day (11:59:59PM Eastern Time) of the day specified.
- All exams must be taken during the scheduled class time, unless prior approval is given from the instructor. In the case of a different exam time, the exam given may be different from the exam given in class.
- Inform the instructor of any special needs or arrangements, including university sport or disability requirements, at the beginning of the semester! If you require accommodations for test-taking from the Office for Students with Disabilities (OSD), please provide the appropriate accommodation documentation during the first week of the semester. You must also provide a test accommodation form for each test in which the accommodation will be required. This documentation should be provided to me at least one week prior to the scheduled exam.
- Email is typically responded to within 24 hours, and is a best effort for replies depending on circumstances.
- Additional course topics, tasks, and items may be added, as technology changes and time permits.
- **DISCLAIMER!** Any information in this document is subject to change at any time without notice.

Tentative Course Schedule - Exact schedule may change

Week 1 1/14/20 1/16/20	Intro and overview Review of Computer Networking History and Terminology Requests for Comments (RFC) Network Addresses and Domain Names Book: Chapters 26 & 27
Week 2 1/21/20 1/23/20	Directory Services Motivation LDAP AD Routing Trends Other systems (NIS, YP, etc) OS Interoperability Book: Chapter 16
Week 3 1/28/20 1/30/20	DNS Overview and Operation Planning and Creating Subdomains Implementation Book: Chapter 24
Week 4 2/4/20 2/6/20	Network Hardware Hubs, Routers, Switches Obtaining a Domain Samba Book: Chapters 28 & 29
Week 5 2/11/20 2/13/20	Network Printers OOB Access DHCP NTP Book: Chapter 23
Week 6 2/18/20 2/20/20	NFS Disaster Recovery Thin Clients SAN NAS Network Virtualization Book: Chapter 25
Week 7 2/25/20 2/27/20	Network based file systems DFS OS Interoperability Midterm Review

Week 8 3/3/20 3/5/20	Midterm Exam Work Time Book: Chapter 31
Week 9 3/10/20 3/12/20	Spring Break - No Class Reading: Ethics & Social Issues
Week 10 3/17/20 3/19/20	Midterm Results Review Backups Book: Chapter 30
Week 11 3/24/20 3/26/19	Virtualization Overview Survey of VM Software Guest OS Installation Containers Reading: ITIL Guide pages 12-45
Week 12 3/31/20 4/2/20	Documentation Change Management Monitoring Automation Book: Chapter 21
Week 13 4/7/20 4/9/20	Other Network Services SSH E-Mail VoIP Firewalls VPN Book: Chapter 22
Week 14 4/14/20 4/16/20	Security Network Security Issues Presentations Work Time Reading: Packet Sniffing
Week 15 4/21/20 4/23/20	Network Security Awareness Social and Ethical Issues Presentations Final Review
Week 16 4/28/20	Final Exam Ross Hall 136 - 6:00-8:00PM