NET 413 – Introductions to LAN Technologies

Fall 2020-2021

Instructor Ahmad Abusini

Office Hours Online using Zoom, Saturdays 3:00 PM to 4:30 PM CST

Course Website http://d2l.depaul.edu

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Meeting time : Online Zoom-Mondays at 5:45PM

Location Online

Text:

Cisco Networking Academy, https://www.netacad.com
Optional Text: CCNA Routing and Switching Complete Study Guide by Todd Lammle, Sybex, 2016, ISBN 978-1119288282

Description:

This course covers the principles of local area network (LAN) technologies including protocols, switching, routing, security and design concepts. The course will focus on the lower layers of the OSI model and explore Ethernet, switching, VLANs, Wi-Fi, securing the network, Spanning-tree protocols (STP and RSTP), and static routing. The course will involve multiple lab exercises and troubleshooting activities to help reinforce the concepts also this course will expand on the topics listed and provide more details on the RSTP,PVRST and switching security.

Learning Outcomes:

1. Describe the devices and services used to support communications in data networks and the Internet.
2. Describe IPv4 and IPv6 address structure and subnetting
3. Design, calculate, and apply subnet masks and addresses to fulfill given requirements in IPv4 networks.
4. Explain fundamental Ethernet concepts such as media, services, and operations.
5. Build a simple Ethernet network using routers and switches.
6. Use command-line interface (CLI) commands to perform basic router and switch configurations.
7. Utilize common network utilities to verify small network operations and analyze data traffic.
8. Describe the purpose, nature, and operations of a router, routing tables, and the route lookup process.
9. Describe how VLANs create logically separate networks and how routing occurs between them.
10. Describe static and dynamic routing.
11. Configure and troubleshoot static routing and default routing.

Changes to Syllabus:

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be thoroughly addressed during class, posted under Announcements in D2L and sent via email.

Prerequisites:

NET 405

Course Breakdown:

- 30% - Lab Assignments
- 30%- Homework Assignments
- 15%-Midterm Exam
- 25%-Final Exam

Some assignments will not be accepted late – this will be marked on the assignment. Any other assignments received late will be penalized as follows: up to 1 day late is 15% penalty; between 1 day and 3 days late is 25% penalty; between 3 days and 7 days late is 40% penalty; More than 1 week late is 60% penalty. Assignments are due by 11:59 pm on the due date unless otherwise indicated. Homework assignments, labs and exams must be completed individually unless the assignment explicitly states that team work is permissible.

Grading Scale

A = 90% - 100%	A- = 88% - 90%	B+ = 86%-88%	B = 80% - 86%
B- = 78% - 80%	C+ = 76% - 78%	C = 70% - 76%	C- = 68% - 70%
D+ = 66% - 68%	D = 60% - 66%	F = 0% - 60%	

Course Schedule:

Date	Topic	Required Reading	Assignment
Week1 9/9	Network Fundamentals, Protocol Layers and Encapsulation	ItN 1.1-1.8, 3.1-3.8,	
	Ethernet and Cabling	ItN 4.1-4.7, 5.1-5.3, 7.1-7.2	
Week2 9/16	IPv4 Addresses and Subnets	ItN 7.1-7.3, 8.1-8.2, 8.4, 9.1-9.4, 11.4-11.8	HW 1 is due 09/22 11:59PM
	Cisco IOS	ItN 2.1-2.9, 10,1-10.4	
		SRWE 1.1-1.6	
Week3 9/23	Switching	ItN 7.3-7.5	Lab1 is due 09/29 11:59PM
	VLANs	SRWE 2.1-2.3	
		SRWE 3.1-3.6	
Week4 9/30	Inter-VLAN Routing, STP	SRWE 4.1-4.5, 5.1-5.2	HW 2 is due on 10/6 11:59PM
	RSTP, Midterm Review	SRWE 5.3	
Week5 10/7	Midterm Exam		Lab2 is due on 10/13
Week6	Etherchannel, DHCP	SRWE 6.1-6.4, 7.1	HW3 is due on 10/20
10/14	IPv6	ItN 8.3, 9.3, 12.1-12.8, 13.1	
		SRWE 8.1-8.5	
Week7	First Hop Redundancy	SRWE 9.1-9.3	Lab3 is due on 10/27
10/21	Routing	SRWE 14.1-14.6	

Week8	Static and Default Routes	SRWE 15.1-15.6	HW4 is due on 11/3
10/28	Route Troubleshooting	SRWE 16.1-16.3	
Week9	Wireless LANs (Wi-Fi)	SRWE 12.1-12.8	Lab4 is due on 11/10
11/4	LAN Security	SRWE 10.1-10.6	
Wee10	Switch Security Configuration	SRWE 11.1-11.6	
11/11	Wrap up and Review		
Week11	Final Exam		

* Cisco Press http://www.ciscopress.com/articles/article.asp?p=101151&seqNum=3

Course Policies:

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Online Course Evaluations

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. They are a requirement of the course and are key to continue to provide you with the highest quality of teaching. The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students do not receive reminders once they complete the evaluation. Students complete the evaluation online in CampusConnect.

Academic Integrity and Plagiarism

All assignments must be completed individually. This course will be subject to the university's academic integrity policy. More information can be found at http://academicintegrity.depaul.edu/. If you have any questions be sure to consult with your professor.

Academic Policies

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the University Academic Calendar. Information on enrollment, withdrawal, grading and incompletes can be found at: cdm.depaul.edu/enrollment.

Students with Disabilities

Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential.
To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at: csd@depaul.edu.

Lewis Center 1420, 25 East Jackson Blvd.
Phone number: (312)362-8002
Fax: (312)362-6544
TTY: (773)325.7296

Incomplete Grades

An incomplete grade is a special, temporary grade that may be assigned by an instructor when unforeseeable circumstances prevent a student from completing course requirements by the end of the term and when otherwise the student had a record of satisfactory progress in the course. All incomplete requests must be approved by the instructor of the course and a CDM Associate Dean. Only exceptions cases will receive such approval. Information about the Incomplete Grades policy can be found at http://www.cdm.depaul.edu/Current%20Students/Pages/Grading-Policies.aspx