SYLLABUS
NET 413
Introduction to LAN Technologies
Fall 2023

September 11, 2023

Instructor:	Dale Buchholz
Class Time:	Monday 5:45-9:00 pm
Location:	Loop Campus – Lewis 1515
Office Hours:	Monday 4:00-5:30 pm or by appointment (Zoom)
Phone:	312-362-6819
Office:	CDM 617
E-mail:	dbuchhol@depaul.edu
Prerequisite:	NET 405
E-Text:	Cisco Networking Academy, https://www.netacad.com
	ItN: Intro to Networks
	SRWE: Switching, Routing and Wireless Essentials
Optional Text:	*CCNA Routing and Switching Complete Study Guide*
	by Todd Lammle, Sybex, 2016, ISBN 978-1119288282

Course Summary:

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.

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 subnets for IPv4 and IPv6 networks.
4. Explain fundamental Ethernet concepts such as media, services, and operations.
5. Build simple Ethernet networks using routers and switches.
6. Use Cisco command-line interface (CLI) commands to perform basic router and switch configuration.
7. Utilize common network utilities to verify network operations and analyze data traffic.
8. Describe purpose, nature, and operations of a router, routing tables, and route lookup process.
9. Describe how VLANs create logically separate networks and routing between VLANs.
10. Describe static and dynamic routing.
11. Configure and troubleshoot static routing and default routing.

Coursework and Grades:

Required coursework components and their contribution to the final grade will be:

a) 4 Homeworks (50 pts each; total 200 pts)
b) 4 Labs (50 pts each; total 200 pts)
c) Final Exam (100 pts)

Further details on each assignment will be distributed in class. Final grades will be calculated as follows: points earned divided by possible points will yield a total course percentage score between 0% and 100%. Letter grades will be assigned as:

Percent	Grade		Percent	Grade
93-100	A		77-79	C+
90-92	A-		73-76	C
87-89	B+		70-72	C-
83-86	B		60-69	D
80-82	B-		< 60	F

Late Assignments:

Late assignments will be accepted solely at the discretion of the instructor. The student MUST notify the instructor in advance if an assignment will be turned in late.

Homework assignments, labs and exams must be completed individually. Class attendance (sync or async) is strongly recommended since lectures may cover topics outside the text. All class sessions will be recorded for asynchronous viewing.

Class Schedule and E-Text:

Class dates, topics, readings on Cisco Networking Academy (CNA), and assignments are shown in the Class Schedule below. Each student is enrolled in 2 online CNA courses: CCNAv7 Intro to Networks (ItN) and CCNAv7 Switching, Routing and Wireless Essentials (SRWE). Note: you are not required to complete any quizzes or Packet Tracer Labs in the CNA course modules (that is, they are not a part of your NET 413 grade), but you are strongly encouraged to complete them on your own to strengthen your skills.

Class Schedule
NET 413—Winter Quarter 2023
(Sept. 11, 2023)

Date	Topics	NetAcad Readings	Assignments
Week 1 Sept. 11	Network Fundamentals, Protocol Layers and Encapsulation	ItN 1.1-1.8, 3.1-3.8	HW0 due Sept.17
Week 2 Sept. 18	Network Fundamentals, Protocol Layers and Encapsulation (cont) Ethernet and Cabling	ItN 4.1-4.7, 5.1-5.3, 7.1-7.2	
Week 3 Sept. 25	IPv4 Addresses and Subnets Cisco IOS	ItN 7.1-7.3, 8.1-8.2, 8.4, 9.1-9.4, 11.4-11.8 ItN 2.1-2.9, 10.1-10.4 SRWE 1.1-1.6	HW 1 due Sept. 24
Week 4 Oct. 2	Switching VLANs	ItN 7.3-7.5 SRWE 2.1-2.3, 3.1-3.6	Lab 1 due Oct. 1
Week 5 Oct. 9	Inter-VLAN Routing, STP, RTSP Etherchannel	SRWE 4.1-4.5, 5.1-5.3	HW 2 due Oct. 8
Week 6 Oct. 16	DHCP IPv6	SRWE 6.1-6.4, 7.1 ItN 8.3, 9.3, 12.1-12.8, 13.1 SRWE 8.1-8.5	Lab 2 due Oct. 15
Week 7 Oct. 23	First Hop Redundancy Routing	SRWE 9.1-9.3 SRWE 14.1-14.6	HW 3 due Oct. 22
Week 8 Oct. 30	Static and Default Routes Route Troubleshooting	SRWE 15.1-15.6 SRWE 16.1-16.3	Lab 3 due Oct. 29
Week 9 Nov. 6	Wireless LANs (Wi-Fi)	SRWE 12.1-12.8	Lab 4 due Nov. 5
Week 10 Nov. 13	LAN Security Switch Security Configuration	SRWE 10.1-10.6 SRWE 11.1-11.6	HW 4 due Nov. 12
Week 11 Nov. 20	Final Exam No class	**Out Monday, Nov. 13**	**Due Monday, Nov. 20**

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.

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. Please see https://resources.depaul.edu/teaching-commons/teaching/Pages/online- teaching-evaluations.aspx for additional information.

Academic Integrity and Plagiarism

This course will be subject to the university's academic integrity policy. More information can be found at https://resources.depaul.edu/teaching-commons/teaching/academic-integrity/Pages/default.aspx.

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: http://www.cdm.depaul.edu/Current%20Students/Pages/PoliciesandProcedures.aspx

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

Students with Disabilities

Students seeking disability-related accommodations are required to register with DePaul's Center for Students with Disabilities (CSD) enabling them to access accommodations and support services to assist with their success. There are two office locations:

- Loop Campus (312) 362-8002
- Lincoln Park Campus (773) 325-1677
- Email: csd@depaul.edu

Students who register with the Center for Students with Disabilities are also invited to contact Dr. Gregory Moorhead, Director of the Center, privately to discuss how he may assist in facilitating the accommodations to be used in a course. This is best done early in the term. The conversation will remain confidential to the extent possible. Please see https://offices.depaul.edu/student-affairs/about/departments/Pages/csd.aspx for Services and Contact Information.