SYLLABUS

TDC 405
Network Fundamentals
Winter Quarter 2020

Instructor:	Greg Brewster
Class Time:	Tuesdays 5:45 pm – 9:00 pm
Office Hours:	Tuesdays 4:00 pm – 5:30 pm or by appointment
Office	CDM 850
Office Phone	312-362-6587 (x26587 from campus phone)
E-mail:	gbrewster@cdm.depaul.edu
E-Text:	CCNAv7 Introduction to Networks: Cisco Networking Academy, https://www.netacad.com.

Course Overview

This course provides an introduction to data networking technologies, including Ethernet and Internet data technologies, network security, business applications and network management. Networking topics will include client/server application software configuration, network connectivity (cabling, switch and router configuration), basic IP addressing, network address translation and options for public Internet access services. Security topics will include typical threats and responses, firewalls, host hardening, password management and virtual private network (VPNs). PREREQUISITE(S): None.

Coursework, Exams, & Grading

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

- 4 homework assignments (25%)
- 6 lab exercises (30%)
- Midterm Exam (15%)
- Technology report (10%)
- Class Participation (5%)
- Final Exam (15%)

Further details on each assignment will be distributed in class. Assignments received late will be penalized as follows: up to 1 day late is 20% penalty; between 1 day and 2 days late is 30% penalty; between 2 days and 1 week late is 40% penalty; more than 1 week late results in no credit for the particular assignment.

Homework assignments, papers and exams must be completed individually. Grade reductions and other sanctions may be imposed on anyone who submits as his/her own

any work which has been prepared by someone else. I expect all students to read and understand DePaul's policy on Academic Integrity.

Class Schedule and E-Text Readings:

Class dates, topics, readings on Cisco Networking Academy (CNA), and Assignments are shown below. Each student is enrolled in an online CNA course - CCNAv7 Intro to Networks (ItN) – which is accessible at https://www.netacad.com. Note: students are not required to complete any of the Quizzes or Labs in the CNA course modules, since they are not a part of TDC 405 grading. However, I would strongly recommend that students complete these Quizzes and Labs on their own to gain further practice and strengthen their networking skills.

Date	***Topics***	***NetAcad ItN Readings***	***Assignments***
Jan. 7	Course Goals and Overview Network Basics, Cabling	1.1-1.7, 3.1-3.8, 4.1-4.5	
Jan. 14	Wired Ethernet and Wi-Fi Ethernet Switching	4.6, 5.1-5.2, 6.1-6.3, 7.1-7.4	HW 1 out Lab 1 out
Jan. 21	IPv4 addressing TCP and packet analysis	8.1-8.2, 9.1-9.2, 11.1-11.7, 14.1-14.6	HW 1 due 1/23 Lab 2 out
Jan. 28	IP subnets and routing IP Subnetting	8.4-8.5, 9.1-9.2,	HW 2 out Lab G-1 out Lab 1 due 1/30
Feb. 4	Routers and Switches	6.3-6.4	HW 2 due 2/4 5:30 pm
Feb. 11	Midterm Exam		Lab 2 due 2/10
Feb. 18	Internet Applications IPv6	8.3, 9.3, 12.1-12.5, 15.1-15.4	HW 3 out Lab 3 out Lab G-1 due Lab G-2 out
Feb. 25	Network Security Encryption, Integrity and Authentication	16.1	HW 3 due 2/27 Lab 4 out
Mar. 3	Network Vulnerabilities Firewalls	16.2-16.4	Lab 3 due 3/5 HW 4 out
Mar. 10	Virtual Private Networks Network Address Translation		HW 4 due 3/10 at 5:30 pm Lab 4 due 3/12 Lab G-2 due 3/14
Mar. 17	Final Exam:		

The Technology Report will consist of an individual report on a relevant networking or security topic. More details on this assignment will be provided in Week 3.

The Class Participation grade will be based mainly on class attendance (section 801) or participation in online discussions (section 810). Attendance will be taken in each class session. Active attendance means that you will respond if I call on you in class.

Final grades will be calculated as follows: points earned divided by possible points in each category will be multiplied by the contribution percentages shown to yield a total course percentage score between 0% and 100%. Letter grades will be assigned as:

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 Learning Outcomes

After completing TDC 405, students will be able to:

- Describe network components, such as hubs, switches and routers, and how each of them forward and modify data packets.
- Describe packet forwarding through each network component
- Calculate IP address assignments using subnetting
- Discuss various types of security attacks and how to mitigate them
- Understand how to secure a network from common attacks
- Describe components of public key infrastructure (PKI) for web security
- Describe how secure web services (HTTPS) and virtual private network (VPN) services are provided using encrypted content and site authentication provided via PKI.
- Use tools such as Wireshark to analyze network traffic
- Basic Cisco router and switch configuration

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 students 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

This course will be subject to the university's academic integrity policy. More information can be found at http://academicintegrity.depaul.edu/. If students have any questions, they should consult their 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.