TDC 460
Foundations of Network Technologies
Fall – Quarter 2018

Instructor: Rami M. Salahieh
Office: LEWIS 1517 by appointment/Classroom LEWIS 1517
Phone: (219) 201-2925 (day) No text, only calls by appointment via email
Class Meeting Time & Location: Monday 5:45pm to 9pm, Lewis 1517
E-mail: ramidepaul@gmail.com

Office hours: By Appointment, Monday 5:00pm to 5:30pm and 9:00pm to 10:00 (LEWIS 1517)

Objectives of course:

An introductory course on network technologies for local and wide area networks. The course examines in detail the core concepts for network architectures, Ethernet systems including wired, wireless, and Metro, virtual local area networks, storage area networks, optical networking, and the more traditional network services such as T-1, frame relay, Asynchronous Transfer Mode (ATM), and SONET.

Course Management System:

D2L will be used in this course

Textbooks and resources:

- Textbook: B. A. Forouzan, Data Communications and Networks, 5th Edition, McGraw-Hill:
- on-line references: provided in topic outline
- course notes: supplied for every lecture
- Supplemental references:
  - Interworking Technology Handbook, Cisco Press, 2004
- Cisco *Packet Tracer* Simulator (available on course D2L site)

Prerequisites:

(TDC 405 and TDC 413) or [(TDC261 or IT263) and (TDC363 or CNS 378)]

Grading:

Final Exam	30%
(4) Labs	30%
(4) Homework	30%
Class Participation	10%

Class participation   refer to grading scale adjustments
Online Discussion D2L required but not graded.

- Late Lab assignments will be penalized 50% for late submission.
- Late Homework assignments will **not** be accepted (no credit will be received)
- Turn all assignments in using D2L.
- Exams are closed book, open notes (two pages, double sided ok) and will take approximately 2 ½ hour to complete. The final exam is comprehensive.
- Make-up exams will be allowed based on prior approval from the instructor

Grading Scale:

A	92% - 100%
A-	89% - 91%
B+	85% - 88%
B	81% - 84%
B-	77% - 80%
C+	73% - 76%
C	69% - 72%
C-	65% - 68%
D	60% - 64%
F	less than 60%

Grading Scale Adjustments:

- Depending on class averages, a *downward* **adjustment** in the grading scale *may* be implemented
- **Class participation (LIVE Section)** may affect final course average from a range of +2% to -2%. The following percentage adjustments will be applied to the final grade based on demonstrated class participation/contribution.
  - +2%:   highly meaningful participation/contribution, consistent attendance
  - +1%:   solid participation/contribution, consistent attendance
  - 0%:   occasional clarifying questions, consistent attendance
  - -1%:   passive, non-relevant questions, one class missed
  - -2%:   passive, non-relevant questions, several classes missed
- **Class contribution (DL Section)** may affect final course average from a range of +2% to -2%. The following percentage adjustments will be applied to the final grade based on demonstrated class contribution using the course collaboration site
  - +2%:   highly meaningful contributions/student assistance provided
  - +1%:   solid contributions/student assistance provided
  - 0%:   one contribution or student assistance provided
  - -1%:   occasional clarifying questions
  - -2%:   none recorded
- **No extra credit** assignments will be provided in this class.

E-mail Correspondence Format:

- Due to the many e-mails that I receive on a daily basis, I asked you to format your e-mail subject heading as follows

  > e.g.   TDC 460: question from lecture day #1

- E-mail responses will be returned no later than two calendar days unless I have notified the class otherwise

General Course Advice:

I view TDC 460 as a **challenging** course due to the breadth of material, the quantity of terms and definitions, and the inherent complexities of networking protocols. In order to succeed, each student must read the reference material, engage in class lectures/discussion, allocate enough time for HW/labs, and take advantage of my office hours

On-Line Networking Periodicals

The following on-line publication is a useful periodical that covers news/updates in the networking trade. I encourage you to bookmark and review:
NETWORKWORLD

WK#	TOPICS	LAB/HW DUE	Reference Material (5th Edition)
#1 Mon 9/10	Course Introduction (Syllabus) Communication model - concepts and definitions Network classifications Standards Protocols and network architectures Network Addresses	Lab1/HW1 Out	Forouzan DC&N Chapters 1 and 2 Cisco's Internet Growth Forecast MINTS Internet Traffic analysis Cisco IOS Command Line Tutorial 2950 Cisco Switch Family overview 2950 software configuration guide
#2 Mon 9/17	Data Signals Data rate, signal bandwidth, channel bandwidth Transmission and network impairments Physical Layer media overview		Forouzan DC&N Chapters 3, 7
#3 Mon 9/24	Data Link Layer functions and methods Introduction to LAN networks and market trends 802.3 Ethernet LAN standards Logical link control and frame formats Physical layer overview and methods	Lab1/HW1 Due by 11:59pm CST Lab2/HW2 Out	Forouzan DC&N Chapters 9, 10.1-10.4,11.1-11.2, 13 IEEE 802 standards
#4 Mon 10/1	802.3 Ethernet LAN standards (continued) MAC layer: CSMA/CD protocol Full duplex and Auto-negotiation Flow control		Forouzan DC&N Chapters 12.1 Ethernet Auto-negotiation overview
#5 Mon 10/8	Ethernet LAN networking Ethernet switch networks 802.1Q VLAN Link aggregation	Lab2/HW2 Due by 11:59pm CST Lab3/HW3 Out	Forouzan DC&N Chapters 17 Understanding RSTP
#6 Mon 10/15	Ethernet 802.1p Class of Service 802.11 LAN Wireless standards and principles		Forouzan DC&N Chapters 30.1-30.2 Forouzan DC&N Chapter 15.1-15.2 802.11 Overview
#7 Mon 10/22	Introduction to WAN networks and market trends *Legacy* WAN physical layer transport technologies *Emerging* WAN physical layer transport technologies WAN Access network technologies/protocols	Lab3/HW3 Due by 11:59pm CST Lab4/HW4 Out	Forouzan DC&N Chapters 6.1, 14.1-14.3 Overview of SONET Overview of T-1 Carrier Systems Broadband Access Technologies
#8 Mon 10/29	WAN switching methods – overview Traffic policing and shaping *Legacy* WAN switching protocols and methods		Forouzan DC&N Chapters 8, 18, 30.1,14.4 Switching methods overview Policing and Shaping overview
#9 Mon 11/5	*Emerging* WAN switching technologies	Lab4/HW4 Due by 11:59pm CST	Forouzan DC&N Chapters 30.1,14.4 MEF Carrier Ethernet SLA Provider Bridging Overview
#10 Mon 11/12	Review for final exam		
#11 Mon 11/19	**FINAL EXAM**		

Course Policies

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. 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 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.
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