SYLLABUS

NET 375
Network Protocols
Spring Quarter 2022

March 31, 2022

Instructor:	Dale Buchholz
Office Hours:	Thursday 4:00-5:30 PM in CDM 617 (or phone/Zoom) Other times can be arranged.
Phone:	312-362-6819
E-mail:	dbuchhol@depaul.edu
Web page:	https://d2l.depaul.edu (D2L site)
Recommended Text:	*Internetworking with TCP/IP, Vol. 1, 6th Edition*, Douglas E. Comer, Pearson Education, Inc., 2014. ISBN: 978-0-13-608530-0
Optional Texts:	*TCP/IP Illustrated, Volume 1, 2nd Edition: The Protocols*, Kevin R. Fall, W. Richard Stevens, Addison-Wesley, 2012 (available through DePaul Library)
	SDN: Software Defined Networks, Nadeau & Gray, Copyright 2013, ISBN: 978-1-449-34230-2.
	End-to-End QoS Network Design, Szigeti, etal., Copyright 2014, ISBN: 978-1-58714-369-4.
Handouts	RFCs and journal papers distributed via D2L

Advanced topics in TCP/IP including in-depth study of IPv6, TCP traffic control, and routing protocols; upper layer protocols supporting Quality of Service (QoS); Software Defined Network (SDN); and other advances in networking technologies.

NET 365 is a prerequisite for this course. It will be assumed that you already know about Ethernet and IPv4 addressing, subnetting and routing.

Grading: Required coursework components will be:

  (a) 3 homeworks (75 points each; 225 total), including homework problems, Wireshark captures, analysis and measurements; and
  (b) 7 labs (50 points each; 350 total) on various aspects of forwarding (layer 2) and routing (layer 3), including QoS.

Points and due date for each homework or lab will be included in its description. All assignments will be due on a Sunday by 11:59 pm. Late homework or labs are accepted entirely at the discretion of the instructor and extensions must be approved beforehand.

Final letter grades are calculated by dividing total points earned by total points available and mapping the resulting percentage into the table below.

Grades

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

Class Schedule
as of March 31, 2022

Date	Topics	Readings	Assignments
March 31	Network Architecture Review IPv4, IPv6 and QoS basics	Ch. 1-5, 12 Gartner.zip	HW0 due April 3
April 7	IPv6 Protocol, Addressing, Subnetting Deployment, NAT64	Ch. 5, 14, 19 IPv6.zip	HW1 due April 17
April 14	Interior Routing: RIP, EIGRP, OSPF	Ch. 14 EigrpOspf.zip	Lab1 due April 17
April 21	Exterior Routing: BGP-4 and MP-BGP	Ch. 13 BGP.zip	Lab2 due April 24
April 28	Quality of Service—Applications VOIP, RTSP, HTTP, TLS/DTLS	Ch, 17, 26 Cisco.zip	HW2 due May 1
May 5	Quality of Service—DiffServ, IntServ		Lab3 due May 8
May 12	Congestion Control: TCP, SCTP RED/WRED, CoDEL	Ch.11 REDCodel.zip	Lab4 due May 15
May 19	Multicast (PIM, IGMP, MLD)	Handouts	Lab**5** due May 22
May 26	Data Center Networking	Handouts	HW3 due May 29
June 2	Automated Networking: SDN, I2RS, Cisco IBN	Ch. 28, SDN.zip VirtualNet.zip	Lab6 due June 5
June 9	Final Wrapup	**All work due**	Lab7 due June 9

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.

Respect for Diversity and Inclusion at DePaul University as aligned with our Vincentian Values

At DePaul, our mission calls us to explore "what must be done" in order to respect the inherent dignity and identity of each human person. We value diversity because it is part of our history, our traditions and our future. We see diversity as an asset and a strength that adds to the richness of classroom learning. In my course, I strive to include diverse authors, perspectives and teaching pedagogies. I also encourage open dialogue and spaces for students to express their unique identities and perspectives. I am open to having difficult conversations and I will strive to create an inclusive classroom that values all perspectives. If at any time, the classroom experience does not live up to this expectation, please feel free to contact me via email or during office hours.

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. All students are expected to abide by the University's Academic Integrity Policy which prohibits cheating and other misconduct in student coursework. Publicly sharing or posting online any prior or current materials from this course (including exam questions or answers), is considered to be providing unauthorized assistance prohibited by the policy. Both students who share/post and students who access or use such materials are considered to be cheating under the Policy and will be subject to sanctions for violations of Academic Integrity.

More information can be found at https://resources.depaul.edu/teaching-commons/teaching/academic-integrity/Pages/default.aspx.

Posting work on online sites, such as Hero

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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

Preferred Name & Gender Pronouns

Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the quarter so that I may make appropriate changes to my records. Please also note that students may choose to identify within the University community with a preferred first name that differs from their legal name and may also update their gender. The preferred first name will appear in University related systems and documents except where the use of the legal name is necessitated or required by University business or legal need. For more information and instructions on how to do so, please see the Student Preferred Name and Gender Policy at http://policies.depaul.edu/policy/policyasp?pid=332.

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.