NYU TANDON SCHOOL OF ENGINEERING

Department of Electrical & Computer Engineering
ECE–GY 5373: Internet Architecture & Protocols – Syllabus

Meeting: Monday, 5:00 - 7:30 PM US EDT

Instructor: Shivendra S. Panwar, panwar@nyu.edu
Office hours via Zoom: To be announced
Phone (during office hour): 1-732-547-8906

Lab Instructor: Dr. Fraida Fund, ffund@nyu.edu, M. Affan Javed, maj407@nyu.edu

Course Graders: TBD

Overview: This course introduces basic networking technologies and protocols in a set of lectures and laboratory experiments. It covers the following topics:

- Data link layer protocols: Ethernet, PPP, IEEE 802.11.
- The Internet Protocol Suite: IP, ARP, RARP, ICMP, IGMP, UDP and TCP.
- LAN Interconnection: Bridges (spanning tree algorithm), Routers, Gateways.
- Application protocols: FTP, SMTP, HTTP, DHCP, SNMP.
- Ping and traceroute programs.

Course Prerequisites: Students must have completed UY-EE 1363 (Principles of Communication Networks) or equivalent.

Textbook

TCP/IP Essentials - A Lab Based Approach", by S. Panwar, S. Mao, J. Ryoo, and Y. Li
Cambridge Press, ISBN-10: 052160124X or ISBN-13: 978-0521601245.

- This book will also be used as a reference book for the labs.
- Each student should have his/her own copy of the textbook. You can access the textbook online with your NYU account via NYU Libraries.

Laboratory Description: A telecommunication networks virtual laboratory, implemented in GENI (Global Environment for Network Innovations) environment, has been set up to provide the students with virtual networking and distributed systems such as user stations, Ethernet Local Area Networks (LANs), Ethernet hubs, Router, Bridges, etc.

Course Work: All students are required to access the NYU Classes website for course logistics and content: announcements, class notes, after-lecture quizzes, solutions, etc.
In addition to lecture and lab assignments, there will be four sets of homework questions provided as study reference. Homework questions will not be graded, but solutions will be made available.

NYU TANDON SCHOOL OF ENGINEERING

Grading & Exams

- Midterm exam: 25%
- Final exam: 25%
- Labs: 40%
- To be determined: 10%

Exam type: TBD (either open book or closed book with one sheet of notes)

Collaboration: Students are encouraged to discuss the labs, reports and homework with each other. However, your written submission, lab reports and exam papers, must be your own work. The first violation of this policy will result in zero points on that assignment and a reduction in your final grade (for example, from B+ to B). A second violation will result in an F grade. For additional information see school's Student Code of Conduct.

Equal educational opportunity and participation for students with disabilities

NYU Moses Center for Students with Disabilities provides comprehensive services and programs. Students with disabilities may get registered there for needed supports.

Tentative Schedule

Fall 2020 School Week (Mon. – Sun.)	Online Lectures	Lab Sections
Week1 (9/2-9/6)	No class	No labs
Week2 (9/7-9/13)	**Monday Sept. 7th, Labor Day, No class**	Lab0
	Wed. Sept. 9th, Lecture 1 - TCP/IP overview	
Week3 (**9/14**-9/20)	Lecture 2 - TCP/IP overview (cont'd)	Lab1
Week4 (**9/21**-9/27)	Lecture 3 - Single segment network	Lab2
Week5 (**9/28**-10/4)	Lecture 4 - L2 LAN	Lab3
Week6 (**10/5**-10/11)	Lecture 5 - Routing	Lab4
Week7 (**10/12**-10/18)	Lecture 6 - UDP & applications	Lab5
Week8 (**10/19**-10/25)	Monday Oct. 19th, Lecture 7 - TCP intro. **Review**	No labs
	Midterm Exam	
Week9 (10/26-11/1)	**Monday Oct. 26th, No class**	No labs
Week10 (**11/2**-11/8)	Lecture 8 - TCP/IP applications	Lab6
Week11 (**11/9**-11/15)	Lecture 9 - Multicast, RT Applications	Lab7
Week12 (**11/16**-11/22)	Lecture 10 - HTTP, DHCP, NAT, …	Lab8
Week13 (**11/23**-11/29)	Lecture 11 - SNMP, Network Security	Lab9
Week14 (**11/30**-12/6)	Lecture 12 - Supplementary topics: IPv6, …	
Week15 (**12/7**-12/13)	**Review**	No labs
Week16 (12/14-12/20)	**Monday Dec. 14th, Reading Day**	No labs
	Final Exam	