



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

Spring 2017

Lecture Time: Monday, 6:00 pm – 8:30 pm

Instructor: Dr. Z. John Zhao

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Office hours: Monday 4:30 – 5:30 PM

Lab Instructors: lead lab instructor Eymen Kurdoglu, ek1666@nyu.edu; individual instructor is assigned to each lab session.

Teaching Assistants: Tianpei Cai, tianpei@nyu.edu; Qiaoxin Xing, qx389@nyu.edu.

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 the instruction book for the labs.
- Each student is required to have his/her own copy of the textbook.

Laboratory Description: A telecommunication networks laboratory, located in LC-004, has been set up to provide the students with basic equipment such as Dell PCs running the Linux Redhat 9.0, Ethernet Local Area Networks (LANs), Ethernet hubs, router/bridges (Cisco), and also the associated software. Other equipment may be added to this list based on availability and need.

Grading & Exams

- Midterm exam: 35%
- Final exam: 40%
- Labs: 20%
- Class quiz: 5%

Exam type: open-book with printed textbook, lecture slides, any hand-written notes.

Course Work

All students are required to access the [NYU Classes](#) website for course logistics and content: announcements, homework, solutions, class notes, etc. **Note** lab reports are assigned and collected by lab instructors from each lab session.

In addition to lab report 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.

Collaboration

Students are encouraged to discuss the labs, reports and homework with each other.

However, except for team projects, your written submission, lab reports and exam papers, must be your own work. The first violation of this policy will result in zero point 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](#).

Tentative Schedule

Spring 2017 School Week (Mon. – Sun.)	Lectures/Exams on Mondays 6:00 PM – 8:30 PM	Lab Sessions			
		Tue	Wed	Thur	Fri
Wk1 (1/23–1/29)	Lecture 1 - Intro. & TCP/IP overview				
Wk2 (1/30–2/5)	Lecture 2 - Linux & TCP/IP networking	Lab0	Lab0	Lab0	Lab0
Wk3 (2/6–2/12)	Lecture 3 - Single segment network	Lab1	Lab1	Lab1	Lab1
Wk4 (2/13–2/19)	Lecture 4 - L2 LAN	Lab2	Lab2	Lab2	Lab2
Wk5 (2/20–2/26)	Feb. 20th, Presidents' Day – NO Lecture				
Wk6 (2/27–3/5)	Lecture 5 – Routing	Lab3	Lab3	Lab3	Lab3
Wk7 (3/6–3/12)	Lecture 6 – UDP & applications, Review	Lab4	Lab4	Lab4	Lab4
Wk8 (3/13-3/19)	Spring Break – NO Class				
Wk9 (3/20-3/26)	March 20th, Midterm Exam				
Wk10 (3/27-4/2)	Lecture 7 - TCP introduction				
Wk11 (4/3-4/9)	Lecture 8 - TCP/IP applications	Lab5	Lab5	Lab5	Lab5
Wk12 (4/10-4/16)	Lecture 9 - Multicast, RT Applications	Lab6	Lab6	Lab6	Lab6
Wk13 (4/17-4/23)	Lecture 10 - HTTP, DHCP, NAT, ...	Lab7	Lab7	Lab7	Lab7
Wk14 (4/24-4/30)	Lecture 11 - SNMP, Network Security	Lab8	Lab8	Lab8	Lab8
Wk15 (5/1-5/7)	Lecture 12 – IPv6, MPLS, Metro Eth. ...	Lab9	Lab9	Lab9	Lab9
Wk16 (5/8-5/14)	Review, Reading Day				
Wk17 (5/15-5/21)	May 15th, Final Exam				

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