

CMSC 360: Computer Network Theory

27th of August, 2019

Lecture: TR 12:30pm–1:45pm, Stevens Lab
Website: <http://cs.longwood.edu/courses/cmssc360/f19/>

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Office hours: MW: 10:30am–11:30am
T: 2pm–3pm
R: 11am–12pm
by appointment

Course Description

A course covering the theory and design of modern computer networks. Topics include local and wide area networks, the OSI network model, basic network performance analysis, and real time networks. 3 credits.

Prerequisites

CMSC 242.

Textbook and Resources

1. “Computer Networks” by Andrew Tanenbaum, Fifth Edition, Pearson Education/Prentice Hall, 2003, ISBN 978-0132126953
2. We will use the Linux operating system and the gcc/g++ compiler on the department’s computer systems

Course Student Learning Outcomes

At the end of the course, a successful student will be able to:

1. identify the layers of the OSI and TCP/IP architectures;
2. write client/server programs that communicate via TCP/IP;
3. read and implement a protocol specification; and
4. understand principles of network addressing and routing.

Course Structure and Student Expectations

You should expect to spend on average about 9 hours of your time every week on this course, including class and lab time as well as reading, practice, homework, and projects.

Course Requirements

Tentative Course Schedule

Week	Date	
1	Aug. 26–30	Introduction, Physical layer
2	Sep. 4–6	Physical layer
	Sep. 2	<i>Labor Day</i> no class
3	Sep. 9–13	Data Link layer: error detection, I/O multiplexing (Protocol project due 12th)
4	Sep. 16–20	Data Link layer: ethernet, wireless, RFID
5	Sep. 23–27	Network layer: IP, packet switching
6	Sep. 30–Oct. 4	Network layer: routing algorithms (Socket/Data project due 3rd)
7	Oct. 7–11	Network layer: control protocols
8	Oct. 16–18	Transport layer: TCP, UDP
	Oct. 14–15	<i>Fall Break</i> no class
9	Oct. 21–25	Transport layer: congestion control (Distributed hash table project due 24th)
10	Oct. 28–Nov. 1	Application Layer: RFCs
11	Nov. 4–Nov. 8	Application Layer: email, protocols
12	Nov. 11–15	Application layer: dns, host resolution (POP3 project due 14th)
13	Nov. 18–22	Application Layer: streaming
14	Nov. 25	Projects
	Nov. 27–29	<i>Thanksgiving</i> no class
15	Dec. 2–Dec. 6	Projects (Application group project due 5th)
	Dec. 10	Final Exam: Wed. 11:30am-2:00pm

Important university dates

Sep. 03	Last day of Add/Drop (5pm)
Oct. 04	Last day for Pass/Fail (5pm)
Nov. 06	Deadline to withdraw with “W”
Dec. 06	Last day of classes

Grading Scale

		A	100–91	A–	90
B+	89	B	88–81	B–	80
C+	79	C	78–71	C–	70
D+	69	D	68–61	D–	60
			59 and lower is an F		

Graded work

This course is programming intensive, you should budget your time to include reading, assignments, class, and homework. If you are stuck on something talk to me sooner rather than later. The entire course is cumulative so you cannot afford to get behind.

Homework & Quizzes: You are expected to be an active participant in the class. You should be present and engaged. Pop quizzes will be given in class and cannot be made up.

Exams: There will be a cumulative final exam. Exams are to be your work alone and not discussed with anyone.

Projects: There will be five projects. Some projects will be in groups.

Breakdown

Projects:	60%
Final Exam:	25%
Quizzes and Homework:	15%

Policies

For a list of campus wide policies please see:

<http://www.longwood.edu/academicaffairs/syllabus-statements/>

Honor Code

We will follow the Longwood Honor Code in this class. When completing work please do not lie, cheat, or steal.

1. Do not lie and claim someone else's ideas as your own: you must give proper attribution
2. Do not cheat and copy work from another student or the Internet
3. Do not steal someone else's work and submit it: your files are to be written by you
4. YOU are responsible for securing YOUR code/work: do not let someone else have access to your work/files

If you are unsure if your action will violate the honor policy: DON'T DO IT. Feel free to talk with me if you have questions.

Infractions of these policies will be dealt with harshly under the Longwood Honor Code with cases turned in to the Honor Board. Any student convicted of an honor offense involving this class will automatically receive a lowered *final course grade*, potentially severe as an **F**. You should consider all work in this class to be pledged work, whether or not the pledge appears on the assignment.

Support

Programming (and mathematical proof) is a different way of thinking about problem solving. A solution is not necessarily easy or obvious. I strongly encourage you to follow along with the class in readings and activities. When you have questions, ask. In addition to my regular office hours, you can always email to schedule a time to meet. If my office door is open feel free to stop by, if my door is closed I'm not available.

Attendance and late work

You are expected to attend and participate in class. Attendance will be recorded in every class. In accordance with campus policy, missing more than 10% of scheduled class time to unexcused absences may, at my discretion, result in the loss of one letter grade. Missing 25% of class or more, whether excused or not, may result in an automatic failing grade.

Late work will not be accepted outside of exceptional circumstances such as serious medical or family emergencies. Most extensions will require a note from a Longwood administrator.

Laptops and other electronic devices are not to be used during class, except with permission. No food in class.

Inclement weather policy

I don't plan to cancel class for weather unless the entire college shuts down. If extenuating circumstances cause me to cancel class, you will be notified by e-mail.