

CNT 4007C – Computer Network Fundamentals

Fall, 2020

Syllabus

General Information

Course Title: Computer Network Fundamentals
Credits: 4
Instructor: Ye Xia
Office: CSE E538
Office Hours: Wednesday, 1:00 – 3:00 pm, via Zoom
Email: yx1@ufl.edu
Course URL: All course material will be on Canvas.
Classroom: N/A
Class Hours: Tues. periods 7, 1:55 pm - 2:45 pm
Thur. periods 7-8, 1:55 pm - 2:45 pm, 3 pm - 3:50 pm

TA: Paul, Dhrubo
Email: d.paul@ufl.edu
Office Hours : Mondays 2PM - 4PM, Wednesdays 8PM - 9PM, via zoom

Textbook

James F. Kurose and Keith W. Ross. *Computer Networking - A Top-Down Approach*, 7th edition.

Note: Please make sure you have access to this newest edition. The homework questions will be from the textbook.

The lectures generally follow the textbook closely and sequentially. Please read the chapters/sections before or when we cover them in lectures. It is a good practice to have a cursory reading ahead of the lecture, and then a more careful reading afterwards.

Slides: The lecture slides are on Canvas.

Objectives

This is an introductory course on computer networks. We will focus on the concepts and fundamental design principles that have contributed to the global Internet's scalability and robustness and will survey the underlying technologies --- e.g., HTTP, DNS, TCP/IP Protocols, Ethernet, and routers --- that have led to the Internet's phenomenal success.

Topics include: application to link layer protocols, congestion/flow/error control, routing, addressing, multicast, packet scheduling, switching, internetworking, network security (possibly), multimedia networks, wireless networks and networking programming interfaces. We will also cover recent development in overlay and peer-to-peer networks.

We will cover most of the materials in Kurose and Ross' book chapters 1 through 7. You are also expected to complete one programming project, spread throughout the semester.

Prerequisites

COP4600. Basic operating system knowledge. You should be able to write simple programs in Java or C/C++. Calculus at the level of MAC 2312 and basic probability at the level of STA 2023.

Grading

Project	25%
Homework....	10%
Midterm.....	30%
Final ...	35%

The letter grades for the course will be assigned based on a curve.

Exams

Midterm:	Oct. 15, Tuesday, 1:55pm – 3:55pm
Final:	Dec. 17, Thursday, 3pm - 5pm

The exams each will be closed book and closed notes. You can use a calculator; but it is not really needed. Please don't use your mobile phone for any purpose.

Midterm covers up to Section 3.4 (inclusive). Skip Sections 1.6-1.7; 2.3.

Final covers Section 3.5 till the end of Chapter 7. Skip Section 5.7.

Homework

There will be 6 homework assignments. Students will work individually on the homework. The due date for each assignment will be given at the time it is posted. Homework will be submitted on Canvas before the midnight of the due date. Late submissions will face 30-point reduction (out of 100), and will be accepted until one week after the original due date or until the solutions are posted, whichever is sooner.

Important note about homework: In addition to directly contributing 10% of your course grade, each exam will have at least 10% of the points coming directly from the homework questions.

Project

Midpoint Check Due: Nov. 2

Final Submission Due: Dec. 9

There will be one network programming project in Java or C/C++. Students will work in teams of 3 persons. Late submissions will NOT be accepted. Details will be posted.

There will be a midpoint check. You are supposed to implement about half of the lines for your project (800 lines or more), which can pass compilation. The midpoint check is worth 5% of your course grade. The final submission is worth 20%.

The project is fairly large (2000 lines of code or more). Please start early after it is assigned, no later than Sept. 28.

E-Learning Use

All course material and submissions will be through Canvas. All due dates are on Canvas.

Course Schedule

The lecture schedule and reading schedule are given on Canvas.

University Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Privacy Statement

Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.