

CMPS 4750/6750 Computer Networks
3 credits
Spring 2020

Instructor: Prof. Zizhan Zheng (zzheng3@tulane.edu)
Class Time & Place: TR 11:00am-12:15pm, Stanley Thomas 302
Office hours: TBA

COURSE OVERVIEW

This is a graduate level course on computer networking. This course covers the core concepts and analytic techniques in the design and analysis of computer networks and network protocols. We will explain both how computer networks work using the Internet as the paradigm and why they work from an optimization and control perspective. Topics to be covered include an overview of the Internet, application layer (HTTP/DNS/P2P), transport layer (TCP/UDP), networking layer (IP), link/physical layer (wired and wireless), and selected topics on network optimization and analysis.

PREREQUISITES

Discrete Mathematics (CMPS/MATH 2170), Introduction to Algorithms (CMPS 2200) or equivalent or instructor approval

COURSE WEBPAGE

<http://www.cs.tulane.edu/~zzheng3/teaching/cmcs6750/spring20/>

COURSE MATERIALS

Textbooks

1. Computer Networking: A Top-Down Approach (7th edition) by James F. Kurose and Keith W. Ross, Pearson, 2016.
2. Communication Networks: An Optimization, Control and Stochastic Networks Perspective by R. Srikant and Lei Ying, Cambridge University Press, 2014.

References

1. [Communication Networks: A Concise Introduction](#) by Jean Walrand and Shyam Parekh, Morgan & Claypool, 2012.
2. TCP/IP Illustrated, Volume 1: The Protocols (2nd edition) by Kevin R. Fall and W. Richard Stevens, Addison-Wesley Professional, 2011.

HOMEWORK AND LABS

There will be both written problem assignments and labs (programming assignments). Graduate level students will be given extra questions that require advanced algorithmic/analytic techniques. Specific instructions will be given in each assignment.

All the assignments will be posted on the course webpage.

EXAMS

There will be a midterm and a final exam. Both will be closed-book and closed-notes, but you will be allowed to bring a cheat sheet to each exam (one letter page single-sided). The midterm will be non-comprehensive, but the final exam will be comprehensive.

LATE POLICY

Without prior arrangements, missing an exam, homework assignments, or project results in a grade of zero. Notification after the exam will result in a score of zero. A request for homework extension or a make-up exam must be given to the instructor prior to the exam date (documentation may be required).

ATTENDANCE POLICY

Students are required to attend all classes unless they are ill or prevented from attending by exceptional circumstances. Students who find it necessary to miss class are responsible for obtaining notes on material covered in lectures or other class sessions.

Students are responsible for notifying instructors about absences that result from serious illnesses, injuries, or critical personal problems. Medical excuses are issued by the Student Health Center in the following instances: illnesses or injuries that involve hospitalization, a partial or complete withdrawal due to medical reasons, or a missed final examination for a medical condition being treated by Student Health Center. In all of these instances, medical information will be released only with the student's written permission.

Instructors are authorized to lower the grades of students who are absent excessively without a satisfactory excuse or do not make up work missed because of absences. With the approval of the Newcomb-Tulane College dean, an instructor may have a student who has excessive absences involuntarily dropped from a course with a WF grade after written warning at any time during the semester.

GRADING POLICY

25% Homework, 20% Labs, 20% Midterm, 25% Final, 10% Class Participation

A >= 93% [Exemplary. Superior achievement.]

A- >= 90% [Outstanding]

B+ >= 87%, B >= 83%, B- >= 80% [High Pass, Above Average]

C+ >= 77%, C >= 73%, [Pass, Average work, Satisfactory] C- >= 70% [Below Average]

D >= 60%, [Low Pass, Unsatisfactory, Barely passing]

F < 60% [Failure, Unacceptable]

All grades will be posted on Canvas.

STUDENTS WITH SPECIAL NEEDS

Any students with disabilities or other special needs, who need special accommodations in this course, are invited to share these concerns or requests with the instructor and contact [Goldman Center for Student Accessibility](#).

CODE OF ACADEMIC CONDUCT

The Code of Academic Conduct applies to all students, full-time, and part-time, in Tulane University. Tulane University expects and requires behavior compatible with its high standards of scholarship. By accepting admission to the university, a student accepts its regulations (i.e. Code of Academic Conduct, [Code of Student Conduct](#)) and acknowledges the right of the university to take disciplinary action, including suspension or expulsion, for conduct judged unsatisfactory or disruptive.

TITLE IX

Tulane University recognizes the inherent dignity of all individuals and promotes respect for all people. As such, Tulane is committed to providing an environment free of all forms of discrimination including sexual and gender-based discrimination, harassment, and violence like sexual assault, intimate partner violence, and stalking. If you (or someone you know) has experienced or is experiencing these types of behaviors, know that you are not alone. Resources and support are available: you can learn more at titleix.tulane.edu. Any and all of your communications on these matters will be treated as either "Confidential" or "Private" as explained in the chart below. Please know that if you choose to confide in me I am mandated by the university to report to the Title IX Coordinator, as Tulane and I want to be sure you are connected with all the support the university can offer. You do not need to respond to outreach from the university if you do not want.

Confidential	Private
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Except in extreme circumstances, involving imminent danger to one's self or others, nothing will be shared without your explicit permission.	Conversations are kept as confidential as possible, but information is shared with key staff members so the University can offer resources and accommodations and take action if necessary for safety reasons.
Counseling and Psychological Services (CAPS) (504) 314-2277 or The Line (24/7) (504) 264-6074	Case Management and Victim Support Services (504) 314-2160 or srss@tulane.edu
Student Health Center (504) 865-5255	Tulane University Police (TUPD) Uptown - (504) 865-5911. Downtown – (504) 988-5531
Sexual Aggression Peer Hotline and Education (SAPHE) (504) 654-9543	Title IX Coordinator (504) 865-5615 or titleix@tulane.edu