CSE5344
Computer Networks
Spring 2019

Instructor: Fred Kashefi, Ph.D. P.E.

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Faculty Profile: Fred Kashefi

Office Hours: Mon/Wed CSE5344: 4:00-5:00 pm or by appointment (ERB 551)
Or if you see door open, just come in.

Section Information: CSE 5344-002

Time and Place of Class Meetings: Tue/Thu 5:30 - 6:50, LS 100

Graduate Teaching Assistant:
Section: 002
Name: Lakshay Sharma
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Office Hours: TBA

Description of Course Content:
Study of computer network architectures, protocols, and interfaces. The OSI reference model and the Internet architecture will be discussed. Networking techniques such as multiple access, packet/cell switching, and internetworking will be studied. Discussion will also include end-to-end protocols, congestion control, high-speed networking, applications and services such as access to the World Wide Web, digital video, digital audio, shared use of application and storage servers, printers, and fax machines, and use of email and instant messaging applications as well as many others.

Prerequisites:
- CSE 3320 or consent of instructor.

Student Learning Outcomes:

Upon completing this course, students are expected to have comprehensive understanding of
- Computer networks from ISPs to WiFi and cellular networks.
- The fundamental problems of computer networking, from sending bits over wires to running distributed applications.

- The error detection and correction, multiple-access, bandwidth allocation, routing, internetworking, reliability, quality of service, naming, content delivery, and security.
- Student will learn how the internals of the Internet work to support the Web and other networked applications.
- Understand the widely-used networking technologies such as TCP/IP, HTTP, 802.11, Ethernet, and DNS.

Required Textbooks and Other Course Materials:

- J. Kurose and K. Ross, *"Computer Networking: A Top-Down Approach Featuring the Internet, 7/E,"* Pearson, 2017.

Optional Textbooks and Additional References:

- D. Bertsekas and R. Gallager, *Data Networks*, *2nd Ed.*, Prentice Hall, 1992.
- H. Chao and X. Guo, *Quality of Service Control in High-Speed Networks*, Wiley, 2002.
- D. Comer, *Interworking with TCP/IP: Principles, Protocols, and Architectures*, 6*th ed.*, Addison-Wesley, 2014.
- D. Comer, *Computer Networks and Internet*, Pearson, 2008.
- J. Davidson et. al., *Voice over IP Fundamentals*, *2nd ed*, Cisco Press, 2007.
- Srinivasan Keshav, *Mathematical Foundations of Computer Networking*, Addison-Wesley, 2012.
- J. Matthews, *Computer Networking: Protocols in Action*, Wiley, 2005.
- N. F. Mir, *Computer and Communication Networks*, Prentice Hall, 2007.
- H. G. Perros, *Connection-Oriented Networks*, Wiley, 2005.
- L. L. Peterson and B. S. Davie, *Computer Networks: A Systems Approach*, *4th ed.*, Morgan Kaufmann, 2007.
- W. Stallings, *High-Speed Networks and Internets: Performance and Quality of Service*, *2nd ed*, Prentice-Hall, 2002.
- H. Sinnreich and A. Johnston, *Internet Communications using SIP*, Wiley, 2006.
- A.S. Tenenbaum, *Computer Networks*, 5*th ed.*, Prentice Hall, 2010.
- J. Walrand and P. Varaiya, *High-Performance Communication Networks*, *2nd ed.*, Morgan Kaufmann, 2000.

Descriptions of major assignments and examinations:

Attendance:
Attendance is not required.

Grading Policy:
Quiz: 70%
Programming and Lab: 30%
Final grades are based on the standard ranges of
A: 90–100, B: 80–89, C: 70–79, D: 60–69, F: 0–59.

Labs: Every lab assignment has a given due date. No late labs will be accepted without prior permission from the course instructor. (Five minutes late is still late.) Lab

assignments will be posted on the class website. Lab assignments must be **individual** effort. The Statement of Ethics you will receive details the definitions of collusion, plagiarism, and academic dishonesty as related to lab assignments in CSE.

Quizzes: Material covered on the quizzes will be based on the assigned chapters and class lectures. All quizzes are mandatory. There are NO make-up quizzes after the scheduled times. All quizzes will be kept by the instructor.

Grade Grievance Policy:
Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current undergraduate catalog (see here).

The first step is as follows. If you do not believe a grade on a particular assignment is correct, you may appeal the grade in writing (by email) within 5 days. Grade appeals must be appealed to the appropriate GTA first, then to the instructor if necessary.

Drop Policy:
Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering.
Students will not be automatically dropped for non-attendance. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships.

Americans with Disabilities Act:
The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the Americans with Disabilities Act (ADA). All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found here or by calling the Office for Students with Dis. at (817) 272-3364.

Title IX:
The University of Texas at Arlington is committed to upholding U.S. Federal Law “Title IX” such that no member of the UT Arlington community shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity. For more information,

visit www.uta.edu/titleIX.

Academic Integrity: At UT Arlington, academic dishonesty is completely unacceptable and will not be tolerated in any form, including (but not limited to) "cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts" (UT System Regents' Rule 50101, §2.2). Suspected violations of academic integrity standards will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

Electronic Communication:
UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at **here.**

Student Feedback Survey:
At the end of each term, students enrolled in classes categorized as lecture, seminar, or laboratory will be asked to complete an online Student Feedback Survey (SFS) about the course and how it was taught. Instructions on how to access the SFS system will be sent directly to students through MavMail approximately 10 days before the end of the term. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback data is required by state law; student participation in the SFS program is voluntary.

Final Review Week:
A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week unless specified in the class syllabus. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures:
Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.

Student Support Services:

UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

Emergency Phone Numbers:
In case of an on-campus emergency, call the UT Arlington Police Department at 817-272-3003 (non-campus phone), 2-3003 (campus phone). You may also dial 911.