

CSCI434 - Computer Network

Course Syllabus - (Fall 2026)

Instructor Information

Instructor: Song Huang, Ph.D.

Email: Song.Huang@tamuc.edu (always reachable via Email)

Office Location: Online, must log in myLeo Online

Office Hours: Please request meeting via Emails

Preferred Form of Communication: Email

To communicate with the instructor about this course please use the email address:

Song.Huang@tamuc.edu, make sure you use your **University Email** to send emails, otherwise, you won't get any response.

Course Description

This course covers the basic principles and operations of computer networks. Topics include basic data communications, network architecture, design principle, the OSI model, protocols and applications. We will study the application layer, transportation layer, networking layer, and link layer. Specifically, TCP/IP networking and protocols will be covered to understand the Internet core functions including routing, subnetting, and reliable data transfer. The Internet architecture and operations will also be reviewed with core services and applications.

In addition, students will have the opportunity to gain practical experience with the installation and administration of TCP/IP platforms. Students are expected to build several networking projects.

Expected Outcomes

- Explain the architecture, protocols, and operation of modern computer networks.
- Design and configure IP-based networks using appropriate addressing, routing, and switching techniques.
- Analyze network traffic and troubleshoot connectivity and performance issues using standard networking tools.
- Evaluate network security threats and implement appropriate protection mechanisms.
- Apply networking knowledge to develop practical solutions that meet technical, security, and organizational requirements.

Textbook

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

Prerequisite

Lvl U COSC 2325 Min Grade C and Lvl U COSC 2336 Min Grade C or Lvl U CSCI 270 Min Grade C

Tentative Schedule

Week	Lecture
1	Introduction to Computer Networks and the Internet
2	Application Layer: Network Applications, HTTP, DNS, Email, P2P
3	Transport Layer: UDP, Reliable Data Transfer, TCP
4	Transport Layer: Congestion Control and TCP Performance
5	Network Layer: Routing Principles and IP Addressing
6	Network Layer: Routing Algorithms, Routers, and IPv6
7	Laboratory Activities (Wireshark, Packet Tracer, Review Exercises)
8	Exam 1
9	Data Link Layer: Error Detection, Multiple Access, Ethernet
10	Link Layer LANs: Switching, VLANs, and MAC Protocols
11	Wireless and Mobile Networks
12	Network Security Fundamentals: Cryptography, Authentication, Secure Protocols
13	Network Management, Multimedia Networking, and Cloud Networking Concepts
14	Emerging Networking Technologies: SDN, Data Centers, IoT, and Modern Network Architectures
15	Laboratory Activities (Packet Analysis, Network Troubleshooting, Project Presentations)
16	Exam 2

Tentative Breakdown of Course Grade

Assignments	30%
Quizzes	20%
Labs	10%
Exams	40%

Letter grades will be determined using a standard percentage of points scale

A	90%
B	80%
C	70%
D	60%
F	Below 60%

Reading Assignments, Homeworks and Exams

Assignments

Assignment will be handed out weekly and students are required to finish the tasks in the assignments. There are various forms of questions in the Assignments, for example, written-response questions may be given, lab exercises may be given as well. No late homework will be accepted. Homework must be done individually, and students should learn how to solve problems.

Quizzes

Students will complete periodic quizzes to assess their understanding of the course material. Each quiz consists of multiple-choice questions covering the topics introduced during the previous week's lectures.

Exams

There are 2 exams in the semester, Exam 1 covers the information given in the first half of the semester, and Exam 2 covers the the lectures in the second half of the semester.

Missing Assignments

No late/missing submission will be accepted. If students only missed one / two submissions during the semester, it will not impact the final grade. However, if there are some situations result in the missing assignments, students should communicate with instructor beforehand.

Collaboration Policy

Students are encouraged to talk to each other, to the instructor, or to anyone else about any of the assignments. Any assistance, though, must be limited to discussion of the problem and sketching general approaches to a solution. **Each student must write out his or her own solutions to the homework.** Consulting another student's or group's solution is prohibited, and submitted solutions may not be copied from any source. These and any other form of collaboration on assignments constitute cheating. If you have any question about whether some activity would constitute cheating, please feel free to ask.

Students with Disability

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
East Texas A&M University
Gee Library, Room 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamuc.edu

Academic Integrity

Your commitment as a student to learning is evidenced by your enrollment at East Texas A & M University. All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment.” (See Student’s Guide Handbook, Policies and Procedure, Conduct). All phones, pagers, and other communication devices are to be turned off or place on silent mode during class. Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person’s ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. **Anyone cheating will receive a zero on the work they are doing, and subsequent cheating will result in a failing grade.**

Texas A&M University-Commerce acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course. Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors’ guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty

13.99.99.R0.10 Graduate Student Academic Dishonesty