



CSCI 434 01E Computer Networks

COURSE SYLLABUS: Fall 2025

INSTRUCTOR INFORMATION

Instructor: Kathiravan Natarajan

Office Location: JOUR 209

Office Hours: Monday, 1:30 PM to 2 PM and 4 PM to 5 PM

Office Phone: N/A

Office Fax: N/A

University Email Address: Kathiravan.Natarajan@tamuc.edu

Preferred Form of Communication: Email with the subject CSCI 434 01E

Communication Response Time: Within 1 day

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

Textbook(s) Required

COMPUTER NETWORKING

Author: KUROSE

Edition: 8TH

Published Date: 2021

ISBN: 9780135928615

Publisher: PEARSON

Course contents will be shared on the course web page. A textbook is beneficial but not mandatory.

Software Required

It will be communicated on the course page.

Optional Texts or Materials

Course materials should suffice in achieving the educational goals of this course.

The syllabus/schedule are subject to change.

Course Description

This course provides a comprehensive introduction to computer networking, covering foundational concepts such as network architectures, protocols, the Internet, and data transmission. Students will explore key topics including the application, transport, network, and link layers, with hands-on assignments and projects to reinforce learning. The course follows the 8th edition of *Computer Networking: A Top-Down Approach* by Kurose and Ross, ensuring up-to-date content aligned with current industry standards. Emphasis is placed on real-world networking scenarios, performance analysis, and security principles. By the end of the course, students will have a strong understanding of how modern networks operate and interconnect.

Additional topics include an introduction to AWS Cloud Networking, covering VPC, subnets, routing, and secure cloud communication setup. Students will gain practical exposure to cloud-based networking configurations.

Student Learning Outcomes

1. To understand the basic terms of computer networks and understand the network infrastructure, switches, routers, and VLANs
2. To understand the network protocols and standards, such as DNS, DHCP, and web
3. To plan the networks by understanding the LANs, WANs, server and virtualization architectures, and storage architectures such as RAID
4. To understand the concepts of network hardware, wireless networks, windows clients, Mac networks, and VPNs
5. Implement virtualization solutions using platforms such as Hyper-V, VMware, and explore basic AWS cloud networking (e.g., VPC, subnets).
6. Gain hands-on experience configuring, managing, and troubleshooting networks on both Linux and Windows environments.
7. Demonstrate knowledge of real-world network administration tasks and understand pathways toward industry certifications (e.g., CompTIA Network+, AWS Certified).

COURSE REQUIREMENTS

Minimal Technical Skills Needed

No prerequisites needed

Instructional Methods

In-person lectures in the assigned classroom. The instructor will share the course materials on the course web page as well.

Student Responsibilities or Tips for Success in the Course

The syllabus/schedule are subject to change.

- Keep up-to-date with the weekly quizzes
- Practice command line commands discussed in the classroom
- Complete the homework on time and
- Reach out to instruction for any questions and clarifications

GRADING

Final grades in this course will be based on the following scale:

A = 90%-100%

B = 80%-89%

C = 70%-79%

D = 60%-69%

F = 59% or Below

Total points corresponding to the final letter grades

A = 451- 500 Points

B = 401- 450 Points

C = 351- 400 Points

D = 301- 350 Points

F = 300 & > Points

Weights of the assessments in the calculation of the final letter grade.

Example:

Weekly Quizzes	15%
Group project [networking in AWS cloud]	10%
Assignment	25%
[In Class] Two Midterm Exams	30%
[In Class] Final Exam	20%
TOTAL	100%

Assessments

The assessments, including the two midterm exams [in class], the final exam [in class] and the project, will be in-person.

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TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

Zoom Video Conferencing Tool

https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom_Account.aspx?source=universalmenu

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

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Interaction with Instructor Statement

Students are encouraged to actively engage with the instructor for questions, clarification, or additional support. The instructor will be available immediately after class on Mondays from 1:30 PM to 2:00 PM and from 4:00 PM to 5:00 PM in the classroom and/or JOUR 209 for office hours. You are welcome to reach out during this time or via email to schedule additional meetings if needed. Open communication is highly encouraged to support your success in this course.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](#).

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum:

<https://www.britannica.com/topic/netiquette>

TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedures 13.99.99.R0.01](#)

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

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Academic Integrity

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03 Undergraduate Student Academic Dishonesty Form](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/documents/13.99.99.R0.03UndergraduateStudentAcademicDishonestyForm.pdf>

[Graduate Student Academic Dishonesty Form](#)

<http://www.tamuc.edu/academics/graduateschool/faculty/GraduateStudentAcademicDishonestyFormold.pdf>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

Students with Disabilities-- ADA Statement

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

Texas A&M University-Commerce

Velma K. Waters Library Rm 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: studentdisabilityservices@tamuc.edu

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

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Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

A&M-Commerce Supports Students' Mental Health

The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit www.tamuc.edu/counsel

AI use policy [Draft 2, May 25, 2023]

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.

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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

Department or Accrediting Agency Required Content

COURSE OUTLINE / CALENDAR

Weeks	Dates	CONTENT	Quiz and Assignment posted on the completed Syllabus	Due Dates	Quizzes and Assignments Due Date
Week 1	8/25/2025	Course Intro, Network Infrastructure, Internet, Packet	In Class/Online - Cloud Project Description and explanation of AWS services		

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		and Circuit switching, loss, throughput			
Week 2	9/1/2025	Labor Day - No Class			
Week 3	9/8/2025	Conceptual models and network devices	9/8	9/15	Quiz 1 and Assignment 1
Week 4	9/15/2025	Application Layer – Networking applications, HTTP, FTP	In Class - Project Work - First phase		
Week 5	9/22/2025	Application Layer – SMTP, DNS, Socket programming in Python, Python overview	9/22	9/28	Quiz 2 and Assignment 2
Week 6	9/29/2025	Midterm Test 1			
Week 7	10/6/2025	Transport layer – multiplexing/demultiplexing, TCP, UDP	In Class - Project Work - Second phase		
Week 8	10/13/2025	Transport layer – TCP congestion control	10/13	10/20	Quiz 3 and Assignment 3
Week 9	10/20/2025	Network Layer – IPv4, IPv6	10/20	10/27	Quiz 4 and Assignment 4
Week 10	10/27/2025	Network Layer – Routing Algorithms, ICMP	10/27	11/3	Quiz 5 and Assignment 5
Week 11	11/3/2025	Link Layer – Error Detection and correction techniques	11/3	11/16	Quiz 6 and Assignment 6
Week 12	11/10/2025	LANs – Switched LANs, VLANs, Data Center Networking	In Class - Project Work - Third phase		
Week 13	11/17/2025	Midterm Test 2			
Week 14	11/24/2025	Network Security (Intrusion detection) and Cryptography		11/24	AWS Final Project Presentation -

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					Cloud Networking
Week 15	12/3/2025	Final Exam			

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