CSCI 434 01W Computer Networks

COURSE SYLLABUS: FALL 2024

INSTRUCTOR INFORMATION

Instructor: Kathiravan Natarajan
Office Location: JOUR 209
Office Hours: The course instructor will communicate via the course page
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: 1 day to 3 days

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

Student Learning Outcomes (Should be measurable; observable; use action verbs)

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. To implement virtualization in Hyper-V, VMWare, desktop, and some cloud platforms such as AWS, GCP, and Azure.
6. To achieve hands-on experience in implementing networks in Linux and Windows platforms
7. To understand and visualize the network administration in a real-time setting along with the explanation of industry-recognized certifications

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

- 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%

The *syllabus/schedule are subject to change.*

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	25%
Assignment	25%
Two Midterm Exams	30%
Final Exam	20%
TOTAL	100%

Assessments

The assessments will be online, including the midterm and final exams.

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

The *syllabus/schedule are subject to change.*

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

Interaction with Instructor Statement

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.

The *syllabus/schedule are subject to change.*

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

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.

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.

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

The *syllabus/schedule are subject to change.*

COURSE OUTLINE / CALENDAR

Week	CONTENT	Quizzes and Assignments
W1 (08/28)	Course Intro	
W2 (09/04)	Network Infrastructure, Internet, Packet and Circuit switching, loss, throughput	
W3 (09/11)	Conceptual models and network devices	Quiz 1 and Assignment 1
W4 (09/18)	Application Layer – Networking applications, HTTP, FTP	Quiz 2 and Assignment 2
W5 (09/25)	Application Layer – SMTP, DNS, Socket programming in Python, Python overview	Quiz 3
W6 (09/30)	Midterm Test 1	
W7 (10/02)	Transport layer – multiplexing/demultiplexing, TCP, UDP	
W8 (10/09)	Transport layer – TCP congestion control	Quiz 4 and Assignment 3
W9 (10/16)	Network Layer – IPv4, IPv6	Quiz 5
W10 (10/23)	Midterm Test 2	
W11 (10/30)	Network Layer – Routing Algorithms, ICMP	Quiz 6 and Assignment 4
W12 (11/06)	Link Layer – Error Detection and correction techniques	Quiz 7 and Assignment 5
W13 (11/13)	LANs – Switched LANs, VLANs, Data Center Networking	Quiz 8 and Assignment 6
W14 (11/20)	Network Security (Intrusion detection) and Cryptography	Quiz 9
W15 (11/27)	Thanksgiving Break	
W16 (12/04)	Final Preparation Week	
W17 (12/11)	Final Exam	

The *syllabus/schedule are subject to change.*

The *syllabus/schedule are subject to change.*