College of **Business Administration**

CIS 4378 Comprehensive Networking
COSC 4378 Computer Networks
Face-to-face course
MW   3:30 pm - 4:45 pm
FH 308
Spring 2023
Texas A&M University-Central Texas

COURSE DATES, MODALITY, AND LOCATION
This course meets face-to-face, with supplemental materials made available online through the A&M-Central Texas Canvas Learning Management System [https://tamuct.instructure.com/].All announcement regarding homework assignments, class tests, discussions, exams will be posted in Canvas. Students are required to access the Canvas course page at least twice a week to get any update regarding this course. Online learning requires all the enrolled students to self-paced and prepare themselves to comply with assigned class assignments and exams.

INSTRUCTOR AND CONTACT INFORMATION
Instructor: Abhijit K Nag, Ph.D.
Office: FH 323
Phone: (254)501-5933 (COBA office)
Email: Canvas Inbox (preferred). If the canvas is unavailable, email me: aknag@tamuct.edu.

Office Hours
Mon/Wed 2:30 pm –3:30 pm (virtually via course chat option or WebEx/Teams meeting). I am also available for students on an appointment basis. Send me an email (**aknag@tamuct.edu**) to schedule an appointment to meet.

Student-instructor interaction
Students are encouraged to send all course-related correspondence to Canvas email message. Students will use TAMUCT email only when Canvas is not available. Students should use their university email address to send the email to the course instructor.

SAFEZONE. SafeZone provides a public safety application that gives you the ability to call for help with the push of a button. It also provides Texas A&M University-Central Texas the ability to communicate emergency information quickly via push notifications, email, and text messages. All students automatically receive email and text messages via their myCT accounts.

Downloading SafeZone allows access to push notifications and enables you to connect directly for help through the app.

You can download SafeZone from the app store and use your myCT credentials to log in. If you

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would like more information, you can visit the SafeZone website [www.safezoneapp.com].

To register SafeZone on your phone, please follow these 3 easy steps*:
1. Download the SafeZone App from your phone store using the link below:
   o iPhone/iPad: [https://apps.apple.com/app/safezone/id533054756]
   o Android Phone / Tablet
     [https://play.google.com/store/apps/details?id=com.criticalarc.safezoneapp]
2. Launch the app and enter your myCT email address (e.g. {name}@tamuct.edu)
3. Complete your profile and accept the terms of service

For updates on COVID information, please monitor the University website
[https://www.tamuct.edu/covid19/]

COURSE INFORMATION
Course Overview and description
A comprehensive course requiring the student to plan, analyze, design, install, and configure a working computer network. Specifically, the course will focus on the networking technology, including telecommunication basics, Local Area Networking LAN, wide area networking (WAN), networking operating system configuration, and network analysis, maintenance and administration. Application exercises include the configuration of a network operating system, and network performance analysis and simulation. A modern network operating system will be used for extensive hands-on exercises to practice and demonstrate networking skills.

Course Objective or Goal
Student Learning Outcomes
Students taking this course will be able to:
Clo1. Illustrate network behavior and principles employed in an organization and the underlying operation of the networks.

Clo2. Demonstrate proficiency in the basic networking tools to analyze the state of a network and the correct operation of a protocol.

Clo3. Design, analyze and simulate a complex local area network.

Program level Outcomes	Clo1	Clo2	Clo3
PSLO1: Communicate effectively on technical subjects appropriate to the discipline			
PSLO2: Recognize a reasoned resolution to an ethical challenge in computing context			
PSLO3: Apply knowledge to address the IT security needs of an organization			
PSLO4: Design appropriate computing solutions to business problems			
PSLO 5: Demonstrate knowledge proficiency in Networking & Management	P	P	P

Competency Goals Statements (certification or standards) None

Required Reading and Textbook(s)
Computer Networking: A Top-Down Approach (8th Edition)
Author: James Kurose and Keith Ross

Note: A student of this institution is not under any obligation to purchase a textbook from a university-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.
Supplemental Material: The course textbook will be supplemented with other materials including handouts, oral presentations, software demonstrations, PowerPoint presentations, etc.

COURSE REQUIREMENTS
Course Requirements:
Students are required to complete one midterm exam, one final exam, four class tests and five homework assignments/lab assignments. The topic of all exams and class tests will be declared in the class. Class attendance is mandatory for this course.

In this course, we will be using Virtual Box to launch a Windows 10 Desktop on a classroom machine/your laptop. The Instructor will provide details steps on installing the VM in the class. Students are required to have a portable hard drive (with USB 3.0 port) (at least 500 GB free space available) to store a Windows 10 OS image. You are required to use the image (Virtual machine) for lab assignments during class meeting times.

Class Tests
There will be **four class tests** for this course. The class tests can be conducted online through the Canvas course website. Each class test will be worth **60** points.

Exams
There will be one midterm and one final exam. The midterm exam will contain **210** points, and

the final exam will contain **210** points. The final exam will **NOT** be comprehensive for this course.

Assignments
Five assignments (homework and lab assignments) will be given to the students. The due dates of these assignments will be posted in canvas. Each assignment will be worth **60** points.

Class Participation
Attending the class is mandatory to get the class participation points. Canvas discussions will be posted on Discussions tab in Canvas portal. These questions will also be counted toward class participation marks. Total class participation is worth **50** points.

Grading Criteria Rubric and Conversion
The distribution of points for various student activities and the grading scheme are mentioned below:

Student Activity	Quantity	Points	Total
Class Tests	4	60	240
Assignments	5	60	300
Midterm Exam	1	205	205
Final Exam	1	205	205
Class Participation		50	50
Total			1000

Point Range	Letter Grade
1000-900	A
899-800	B
799-700	C
699-600	D
599-0	F

Signature Assignment
For PSLO 5:
In our lab assignments, we used Wireshark to capture live packets and extract the packets based on various protocols. Create a comparison table (compare based on at least five criteria) showing the major differences with Wireshark and other packet capturing tools (at least two tools). You need to provide references for other tools that you mentioned.
You need to write at least 100 words description of other packet capturing tools in addition to the comparison table.

Rubrics for Signature Assignments

Competence (sub competence)	Exceeds expectations	Meets expectations	Needs Improvement	None (no response)
Understanding the tools • Features	Shows complete understanding of tools	Shows understanding of most tools in terms	Shows little understanding of	No response submitted.

• Functionalities	in terms of features and functionalities	of features and functionalities	tools in terms of features and functionalities	
Identifying the comparison criteria • Unique features	Clearly identifies the unique features among tools considered	Identifies major unique features among tools considered	Identifies minimal unique features among tools considered	No response submitted.
Comparing the tools • Measurable values/terms	Compares in detail based on the comparison criteria	Compares in some detail based on the comparison criteria	Compares in very few details based on the comparison criteria	No response submitted.
Citations • Consistent style (APA, MLA, Chicago, etc.)	Citations and references adhere to a professional style	Citations and references inconsistent with a professional style	Citations and references do not follow a professional style	No response submitted.

Posting of Grades

All students' grades will be posted on the Canvas Grade book, and students can monitor their progress in this course using Canvas Portal. Students can expect to see their grades within **two weeks** of the closing of class tests, exams, and assignments. Students are expected to visit Canvas course webpage every week multiple times to get any update regarding this course. All updates regarding homework and tests will be posted in "**Announcement**" tab in Canvas course portal.

Grading Policies
Policies related to grading

- All the assignments must be submitted before the posted deadline in Canvas Course Website unless arrangements are made beforehand.
- Assignments and class tests posted before midterm exam cannot be completed/submitted after the midterm exam.
- Assignments more than **48** hours late are subject to **20%** late penalty.
- Requests for **Incomplete grades**:
  - Incompletes will only be given in emergency or other extreme circumstances. Any request for an incomplete grade in this course must be approved by the course professor prior to April 09, 2023. Where possible, requests should be submitted in written form with reasons and must include an address and/or telephone number where you may be contacted throughout the following semester.
  - For a request of an incomplete grade to be considered, at least **70%** of the total course work (**700 points**) must be completed.
  - Finally, approval of an incomplete grade (*I*) is up to the **department chair** and **college Dean**.

Instructor's Personal Statement
- The instructor reserves the right to **modify the course syllabus** during the semester for the benefit of the students.
- The instructor reserves the right to supplement materials presented in the text with

additional course material that may help the students to understand the topic better.
- The instructor reserves the right to modify grading policy rubrics. Any Change to grading rubrics will be applied to **current and possible future** assignments.
- The instructor will not accept any pending course assignment submissions after **May 01, 2023,** in Spring 2023 semester.

COURSE OUTLINE AND CALENDAR
Complete Course Calendar
The tentative course outline is mentioned below**:**

Week	Dates	Topic	Due
1	Jan 17 –Jan 22	Syllabus Overview	
2	Jan 23- Jan 29	Computer Networks and Internet	
3	Jan 30 – Feb 05	Application Layer	Assignment 1
4	Feb 06- Feb 12	Lab Assignment 1	Class Test 1
5	Feb 13- Feb 19	Transport Layer and End-to-End Protocols	Assignment 2
6	Feb 20-Feb 26	Lab Assignment 2	
7	Feb 27-Mar 05	Network Layer: Data Pane and subnetting	Class Test 2
8	Mar 06-Mar 12	**Midterm Exam**	
9	Mar 13 – Mar 19	**Spring Break**	
10	Mar 20- Mar 26	Subnetting and CIDR (practice problems)	Assignment 3
11	Mar 27- Apr 02	Network Layer: Control Pane	
12	Apr 03 – Apr 09	Lab Exercise 3	Class Test 3
13	Apr 10 – Apr 16	Link Layer and Local Area Network	Assignment 4
14	Apr 17 – Apr 23	Lab Assignment 4	Class Test 4
15	Apr 24- Apr 30	Security in Computer Networks	Assignment 5
16	May 01 –May 07	Lab assignments overview and Final Exam Review	**All Assignment is due by this week.**

Week	Dates	Topic	Due
17	May 08- May 11	**Final Exam**	**Final Exam will be conducted online**

Important University Dates
Please visit the following link to access 2022-2023 academic calendar:
https://www.tamuct.edu/registrar/academic-calendar.html

TECHNOLOGY REQUIREMENTS AND SUPPORT
Technology Requirements
This course will use the A&M-Central Texas Instructure Canvas learning management system.

We strongly recommend the latest versions of Chrome or Firefox browsers. Canvas no longer supports any version of Internet Explorer.
Logon to A&M-Central Texas Canvas [https://tamuct.instructure.com].

    Username: Your MyCT username (xx123 or everything before the "@" in your MyCT e-mail address)
    Password: Your MyCT password

Canvas Support
Use the Canvas Help link, located at the bottom of the left-hand menu, for issues with Canvas. You can select "Chat with Canvas Support," submit a support request through "Report a Problem," or call the Canvas support line: 1-844-757-0953.
For issues related to course content and requirements, contact your instructor.

Other Technology Support
For log-in problems, students should contact Help Desk Central.
24 hours a day, 7 days a week:
        Email: helpdesk@tamu.edu
        Phone: (254) 519-5466
        Web Chat: [http://hdc.tamu.edu]
Please let the support technician know you are an A&M-Central Texas student.

 UNIVERSITY RESOURCES, PROCEDURES, AND GUIDELINES

Academic Accommodations

At Texas A&M University-Central Texas, we value an inclusive learning environment where every student has an equal chance to succeed and has the right to a barrier-free education. The Warrior Center for Student Success, Equity and Inclusion is responsible for ensuring that students with a disability receive equal access to the university's programs, services and activities. If you believe you have a disability requiring reasonable accommodations, please contact the Office of Access and Inclusion, WH-212; or call (254) 501-5836. Any information you provide is private and confidential and will be treated as such.

For more information, please visit our Access & Inclusion Canvas page (log-in required) [https://tamuct.instructure.com/courses/717]

Academic Integrity

Texas A&M University-Central Texas values the integrity of the academic enterprise and strives for the highest standards of academic conduct. A&M-Central Texas expects its students, faculty, and staff to support the adherence to high standards of personal and scholarly conduct to preserve the honor and integrity of the creative community. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. All academic misconduct concerns will be referred to the Office of Student Conduct. When in doubt on collaboration, citation, or any issue, please contact your instructor before taking a course of action.

For more information regarding the student conduct process, [https://www.tamuct.edu/student-affairs/student-conduct.html].

If you know of potential honor violations by other students, you may submit a referral, [https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=0].

Drop Policy

If you discover that you need to drop this class, you must complete the Drop Request Dynamic Form through Warrior Web.

[https://federation.ngwebsolutions.com/sp/startSSO.ping?PartnerIdpId=https://eis-prod.ec.tamuct.edu:443/samlsso&SpSessionAuthnAdapterId=tamuctDF&TargetResource=https%3a%2f%2fdynamicforms.ngwebsolutions.com%2fSubmit%2fStart%2f53b8369e-0502-4f36-be43-f02a4202f612].

Faculty cannot drop students; this is always the responsibility of the student. The Registrar's Office will provide a deadline on the Academic Calendar for which the form must be completed. Once you submit the completed form to the Registrar's Office, you must go into Warrior Web and confirm that you are no longer enrolled. If you still show as enrolled, FOLLOW-UP with the Registrar's Office immediately. You are to attend class until the procedure is complete to avoid penalty for absence. Should you miss the drop deadline or fail to follow the procedure, you will receive an F in the course, which may affect your financial aid and/or VA educational benefits.

Important information for Pregnant and/or Parenting Students

Texas A&M University-Central Texas supports students who are pregnant, experiencing pregnancy-related conditions, and/or parenting. In accordance with requirements of Title IX and related guidance from US Department of Education's Office of Civil Rights, the Dean of Student Affairs' Office can assist students who are pregnant and/or parenting in seeking accommodations related to pregnancy and/or parenting. Students should seek out assistance as early in the pregnancy as possible. For more information, please visit Student Affairs [https://www.tamuct.edu/student-affairs/pregnant-and-parenting-students.html]. Students may also contact the institution's Title IX Coordinator. If you would like to read more about these requirements and guidelines online, please visit the website [http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf].

Title IX of the Education Amendments Act of 1972 prohibits discrimination on the basis of sex

and gender–including pregnancy, parenting, and all related conditions. A&M-Central Texas is able to provide flexible and individualized reasonable accommodation to pregnant and parenting students. All pregnant and parenting students should contact the Associate Dean in the Division of Student Affairs at (254) 501-5909 to seek out assistance. Students may also contact the University's Title IX Coordinator.

Tutoring

Tutoring is available to all A&M-Central Texas students, both virtually and in-person. Student success coaching is available online upon request.

If you have a question, are interested in becoming a tutor, or in need of success coaching contact the Warrior Center for Student Success, Equity and Inclusion at (254) 501-5836, visit the Warrior Center at 212 Warrior Hall, or by emailing WarriorCenter@tamuct.edu.

To schedule tutoring sessions and view tutor availability, please visit Tutor Matching Services [https://tutormatchingservice.com/TAMUCT] or visit the Tutoring Center in 111 Warrior Hall.

Chat live with a remote tutor 24/7 for almost any subject from on your computer! Tutor.com is an online tutoring platform that enables A&M-Central Texas students to log in and receive online tutoring support at no additional cost. This tool provides tutoring in over 40 subject areas except writing support. Access Tutor.com through Canvas.

University Library & Archives

The University Library & Archives provides many services in support of research across campus and at a distance. We offer over 350 electronic databases containing approximately 631,525 eBooks and 75,149 journals, in addition to the 97,443 items in our print collection, which can be mailed to students who live more than 50 miles from campus. Research guides for each subject taught at A&M-Central Texas are available through our website to help students navigate these resources. On campus, the library offers technology including cameras, laptops, microphones, webcams, and digital sound recorders.

Research assistance from a librarian is also available 24 hours a day through our online chat service, and at the reference desk when the library is open. Research sessions can be scheduled for more comprehensive assistance, and may take place virtually through WebEx, Microsoft Teams or in-person at the library. Schedule an appointment here [https://tamuct.libcal.com/appointments]. Assistance may cover many topics, including how to find articles in peer-reviewed journals, how to cite resources, and how to piece together research for written assignments.

Our 27,000-square-foot facility on the A&M-Central Texas main campus includes student lounges, private study rooms, group work spaces, computer labs, family areas suitable for all ages, and many other features. Services such as interlibrary loan, TexShare, binding, and laminating are available. The library frequently offers workshops, tours, readings, and other events. For more information, please visit our Library website [https://tamuct.libguides.com/index]

University Writing Center

University Writing Center: Located in Warrior Hall 416, the University Writing Center (UWC) at Texas A&M University–Central Texas (A&M–Central Texas) is a free service open to all A&M–Central Texas students. The hours of operation are from 10:00 a.m.-5:00 p.m. Monday thru Thursday in Warrior Hall 416 (with online tutoring available every hour as well) with satellite hours available online only Monday thru Thursday from 6:00-9:00 p.m. and Saturday 12:00-3:00 p.m.

Tutors are prepared to help writers of all levels and abilities at any stage of the writing process. While tutors will not write, edit, or grade papers, they will assist students in developing more effective composing practices. By providing a practice audience for students' ideas and writing, our tutors highlight the ways in which they read and interpret students' texts, offering guidance and support throughout the various stages of the writing process. In addition, students may work independently in the UWC by checking out a laptop that runs the Microsoft Office suite and connects to WIFI, or by consulting our resources on writing, including all of the relevant style guides. Whether you need help brainstorming ideas, organizing an essay, proofreading, understanding proper citation practices, or just want a quiet place to work, the UWC is here to help!

Students may arrange a one-to-one session with a trained and experienced writing tutor by making an appointment via WCOnline [https://tamuct.mywconline.com/]. In addition, you can email Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu if you have any questions about the UWC, need any assistance with scheduling, or would like to schedule a recurring appointment with your favorite tutor.

OPTIONAL POLICY STATEMENTS

A Note about Sexual Violence at A&M-Central Texas

Sexual violence is a serious safety, social justice, and public health issue. The university offers support for anyone struggling with these issues. University faculty are mandated reporters, so if someone discloses that they were sexually assaulted (or a victim of Domestic/Dating Violence or Stalking) while a student at TAMUCT, faculty members are required to inform the Title IX Office. If you want to discuss any of these issues confidentially, you can do so through Student Wellness and Counseling (254-501-5955) located on the second floor of Warrior Hall (207L).

Sexual violence can occur on our campus because predators often feel emboldened, and victims often feel silenced or shamed. It is incumbent on ALL of us to find ways to actively create environments that tell predators we don't agree with their behaviors and tell survivors we will support them. Your actions matter. Don't be a bystander; be an agent of change. For additional information on campus policy and resources visit the Title IX webpage [https://www.tamuct.edu/compliance/titleix.html].

Behavioral Intervention

Texas A&M University-Central Texas cares about the safety, health, and well-being of its

students, faculty, staff, and community. If you are aware of individuals for whom you have a concern, please make a referral to the Behavioral Intervention Team. Referring your concern shows you care. You can complete the referral online

[https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=2].

Anonymous referrals are accepted. Please see the Behavioral Intervention Team website for more information [https://www.tamuct.edu/bit]. If a person's behavior poses an imminent threat to you or another, contact 911 or A&M-Central Texas University Police at 254-501-5805.