

College of Business Administration

CIS 4388-130, CRN 10647, Advanced Computer Networking

Spring 2020

Texas A&M University-Central Texas

COURSE DATES, MODALITY, AND LOCATION

This is an Independent Study course. All supplemental readings will be made available online using the TAMUCT Canvas Learning Management System: [<https://tamuct.instructure.com>]. All announcement regarding homework assignments, class tests, midterm/final exams will be posted in Canvas. Students are expected to access Canvas course page regularly to get any update regarding this course.

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

Monday/Wednesday 2:45 pm –3:45 pm (On campus). 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 can meet me at regular office hour (mentioned above) or by appointment to discuss any course related issues.

WARRIOR SHIELD

Emergency Warning System for Texas A&M University-Central Texas

Warrior Shield is an emergency notification service that gives Texas A&M University-Central Texas the ability to communicate health and safety emergency information quickly via email, text message, and social media. All students are automatically enrolled in Warrior Shield through their myCT email account.

Connect to Warrior Shield by [911Cellular](https://portal.publicsafetycloud.net/Account/Login) [<https://portal.publicsafetycloud.net/Account/Login>] to change where you receive your alerts or to opt out. By staying enrolled in Warrior Shield, university officials can quickly pass on safety-related information, regardless of your location.

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:

1. Illustrate network behavior and principles employed in an organization and the underlying operation of the networks.
2. Demonstrate proficiency in the basic networking tools to analyze the state of a network and the correct operation of a protocol.
3. Design, analyze and simulate a complex local area network.

Competency Goals Statements (certification or standards) None

Required Reading and Textbook(s)

Computer Networking: A Top-Down Approach (7th Edition)

Author: James Kurose and Keith Ross

ISBN: 978-0133594140

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 demonstration, 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/Linux Desktop on classroom machine. The Instructor will provide the details steps on installing the VM in the meeting. Students are required to have a portable hard drive (with USB 3.0 port) (at least 500 GB free space available) to store a customized OS image. You are required to bring the image for lab assignments during class meeting times.

Class Tests

There will be **four class tests** for this course. The class tests can be conducted in-class or online through 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. Both exams will be conducted in class.

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.

Course Participation

Meeting with course instructor once every two weeks in mandatory. The meeting attendance will be counted toward course participation marks. Total course 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
Course Participation		50	50
Total			1000

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

Posting of Grades

All students' grade 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 10, 2020. 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 course assignment after **May 01, 2020** in spring 2020 semester.

COURSE OUTLINE AND CALENDAR

Complete Course Calendar

The tentative course outline is mentioned below.

Week	Date	Topic	Due
1	1-13	Introduction to Course/ Syllabus	
	1-15	Computer Networks and Internet	
2	1-20	NO CLASS	
	1-22	Computer Networks and Internet	
3	1-27	Application Layer- Web and HTTP	
	1-29	Application Layer- Electronic Mail and DNS	Assignment 1
4	2-3	Application Layer- Peer to peer applications, video steaming, socket programming	Class Test 1
	2-5	Lab Exercise (Assignment 1)	
5	2-10	Transport Layer and End-to-End Protocols	
	2-12	Transport Layer and End-to-End Protocols	Assignment 2

6	2-17	Lab Exercise 2 (Assignment 2)	
	2-19	Network Layer: Data Pane	Class Test 2
7	2-24	Network Layer: IPv4 and IPv6	
	2-26	Subnet and CIDR	
8	3-2	Midterm Discussion	
	3-4	Midterm Exam in Class	Midterm
9	3-9 and 3-11	SPRING BREAK	
10	3-16	Subnet and CIDR	Assignment 3
	3-18	Network Layer: Control Pane	
11	3-23	Network Layer: Control Pane	
	3-24	Lab Exercise 3 (Assignment 3)	
12	3-30	Link Layer and LANs, Error Detection and Correction	
	4-1	Link Layer and LANs, Switched local area network	Class Test 3
13	4-6	Lab Exercise 4 (Assignment 4)	Assignment 4
	4-8	Security in Computer Networks- securing email	
14	4-13	Security in Computer Networks- securing TCP connection	
	4-15	Overview of Networking Devices	
15	4-20		Assignment 5
	4-22	Lab Exercise 5 (Assignment 5)	
16	4-27	Multimedia Networking	Class Test 4
	4-29		
17	5-4	Final Exam Overview	Final Exam
	5-6	Final Exam in Class	

Important University Dates

- January 13, 2020 Add, Drop and Late Registration Begins for 16- and First 8-Week Classes \$25 Fee assessed for late registrants.
- January 13, 2020 Classes Begin for Spring Semester
- January 15, 2020 Deadline for Add, Drop, and Late Registration for 16- and First 8-Week Classes
- January 20, 2020 Martin Luther King, Jr Day (University Closed)
- January 21, 2020 Deadline to Drop First 8-Week Classes with No Record
- January 29, 2020 Deadline to Drop 16-Week Classes with No Record
- February 21, 2020 Deadline to Drop First 8-Week Classes with a Quit (Q) or Withdraw (W)
- March 1, 2020 Deadline for Teacher Education and Professional Certification Applications
- March 6, 2020 Classes end for 1st 8-Weeks
- **March 9-12, 2020 Spring Break (No Classes - Administrative Offices Open)**
- **March 13, 2020 Spring Break (University Closed)**
- March 10, 2020 Deadline for Faculty Submission of First 8-Week Final Class Grades (due by 3pm)
- March 15, 2020 Deadline for Clinical Teaching/Practicum Applications
- March 16, 2020 Add, Drop, and Late Registration Begins for Second 8-Week Classes \$25 Fee assessed for late registrants
- March 16, 2020 Classes Begin for Second 8-Week Session

- March 16, 2020 Class Schedule Published for Summer Semester
- March 18, 2020 Deadline for Add, Drop, and Late Registration for Second 8-Week Classes
- March 23, 2020 Deadline to Drop Second 8-Week Classes with No Record
- March 27, 2020 Deadline for Graduation Application for Ceremony Participation
- March 30, 2020 Registration Opens for Seniors, Post-Bacc, and Graduate Students for Summer Semester
- April 3, 2020 Deadline to Drop 16-Week Classes with a Quit (Q) or Withdraw (W)
- April 6, 2020 Registration opens for all students for the Summer and Fall Semesters
- April 24, 2020 Deadline to Drop Second 8-Week Classes with a Quit (Q) or Withdraw (W)
- May 8, 2020 (5pm) Deadline for Applications for Tuition Rebate for Spring Graduation
- May 8, 2020 Deadline for Degree Conferral Applications to the Registrar's Office. \$20 Late Application Fee.
- May 8, 2020 Deadline to Withdraw from the University for 16- and Second 8-Week Classes
- **May 8, 2020** Spring Semester Ends
- **May 9, 2020** Spring Commencement Ceremony

TECHNOLOGY REQUIREMENTS AND SUPPORT

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/>] or access Canvas through the TAMUCT Online link in myCT [<https://tamuct.onecampus.com/>]. You will log in through our Microsoft portal.

Username: Your MyCT email 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): [<http://hdc.tamu.edu>]

Please let the support technician know you are an A&M-Central Texas student.

UNIVERSITY RESOURCES, PROCEDURES, AND GUIDELINES

Drop Policy

If you discover that you need to drop this class, you must complete a [Drop Request Form](https://www.tamuct.edu/registrar/docs/Drop_Request_Form.pdf) [https://www.tamuct.edu/registrar/docs/Drop_Request_Form.pdf].

Professors 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, signed and returned. Once you return the signed 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.

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. Academic integrity is defined as a commitment to honesty, trust, fairness, respect, and responsibility. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. Academic misconduct is any act that improperly affects a true and honest evaluation of a student's academic performance and includes, but is not limited to, working with others in an unauthorized manner, cheating on an examination or other academic work, plagiarism and improper citation of sources, using another student's work, collusion, and the abuse of resource materials. All academic misconduct concerns will be referred to the university's Office of Student Conduct. Ignorance of the university's standards and expectations is never an excuse to act with a lack of integrity. 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), [https://www.tamuct.edu/student-affairs/student-conduct.html].

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

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 Office of Access 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>]

Important information for Pregnant and/or Parenting Students

Texas A&M University-Central Texas supports students who are pregnant 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/index.html) [<https://www.tamuct.edu/student-affairs/index.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 on-campus and online. Subjects tutored on campus include Accounting, Advanced Math, Biology, Finance, Statistics, Mathematics, and Study Skills. Tutors are available at the Tutoring Center in Warrior Hall, Suite 111. Tutor.com tutoring **will not offer writing support** beginning August 1, 2019, but will continue to offer other tutoring support.

If you have a question regarding tutor schedules, need to schedule a tutoring session, are interested in becoming a tutor, or have any other question, contact Academic Support Programs at (254) 501-5836, visit the Office of Student Success at 212F Warrior Hall, or by emailing studentsuccess@tamuct.edu .

Chat live with a 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. Access Tutor.com through Canvas.

University Writing Center

Located in Warrior Hall 416, the University Writing Center (UWC) at Texas A&M University–Central Texas (TAMUCT) is a free workspace open to all TAMUCT students from 10:00 a.m.-5:00

p.m. Monday thru Thursday with satellite hours in the University Library Monday thru Thursday from 6:00-9:00 p.m. This semester, the UWC is also offering online only hours from 12:00-3:00 p.m. on Saturdays.

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 visiting the UWC during normal operating hours (both half-hour and hour sessions are available) or by making an appointment via [WOnline](https://tamuct.mywconline.com/) [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 and/or need any assistance with scheduling.

University Library

The University Library provides many services in support of research across campus and at a distance. We offer over 200 electronic databases containing approximately 250,000 eBooks and 82,000 journals, in addition to the 85,000 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 on Skype or in-person at the library. 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](http://tamuct.libguides.com/index) [http://tamuct.libguides.com/index].

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 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/departments/compliance/titleix.php) [<https://www.tamuct.edu/departments/compliance/titleix.php>].

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, who are exhibiting concerning behaviors, or individuals causing a significant disruption to our community, please make a referral to the Behavioral Intervention Team. Referring your concern shows you care. You can complete the [referral](https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=2) online [https://cm.maxient.com/reportingform.php?TAMUCentralTexas&layout_id=2].

Anonymous referrals are accepted. Please see the [Behavioral Intervention Team](https://www.tamuct.edu/student-affairs/bat.html) website for more information [<https://www.tamuct.edu/student-affairs/bat.html>]. If a person's behavior poses an imminent threat to you or another, contact 911 or A&M-Central Texas University Police at 254-501-5800.
