CIS 4345-110, CRN 80270, Network and Systems Security
Monday/ Wednesday 3:30 – 4:45 pm
Class Room: Founder's Hall - 307.
Fall 2022
Texas A&M University-Central Texas

COURSE DATES, MODALITY, AND LOCATION
This is a face-to-face course, which meets Mondays/Wednesdays Face to Face. The course contents will be made available 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 (multiple times in a week) to get any update regarding this course. They can also install Canvas student app on their phone.

INSTRUCTOR AND CONTACT INFORMATION
Instructor: Abhijit K Nag, Ph.D.
Office: FH 323I
Phone: (254) 519-5933(COBA office)
Email: Canvas **Inbox.** If Canvas is not available, email: **aknag@tamuct.edu**

Office Hours:
Monday 2:00 pm –3:30 pm (virtually via MS Teams). I am also available for students on an appointment basis. Send me an email (**aknag@tamuct.edu**) to schedule an appointment to meet.

Mode of instruction and course access:
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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.

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

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 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:
Studies the issues of Network and Systems Security as a continuous process involving analysis, implementation, evaluation and maintenance. Topics will include addressing computer-related risks, case analysis, and future trends. The course will provide approaches, techniques, and best practices for securing modern electronic data systems and networks. Areas covered include information and message security, database and file integrity, physical security, security management, security risk analysis, and encryption/cryptography. Will include practical laboratories in the analysis, and configuration of networking security protocols and tools. Prerequisites: CIS 3347 or approval of Department Chair.

Course Objective:
Student Learning Outcomes:
Students taking this course will able to understand the common threats of computing resources, how to detect and prevent those threats in today's computing systems, what are the techniques hackers used to compromise security, how to encrypt message while sending over the communication network.

Competency Goals Statements (certification or standards): None
Required Reading and Textbook(s):
Computer Security Fundamentals Edition: 4th Edition. Author: Chuck Easttom II.
ISBN-13: **978-0135774779**.

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 required for this course and will count towards class participation points.

In this course, we will be using Virtual Box to launch **Windows 10 OS** on Windows/Linux machine. Detail instruction how to download the Windows 10 ISO file from Microsoft Azure and your credentials to access the account will be announced in the class.

Students are required to have a **portable hard drive (with USB 3.0 port) (at least 300 GB free space available**) to store the Windows 10 image. If you use your own laptop, you need to install **Virtual Box** software to create the virtual machines. You are required to bring the image for lab assignments during class meeting times or do the lab in online environment.

Class Tests

There will be **four class tests** for this course. The class tests will be conducted online through Canvas course website under Quiz section. Each class test will be worth **60** points.

Exams

There will be one midterm and one final exam. The midterm exam will contain 200 points, and the final exam will contain 200 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 portal. Each assignment will be worth **60** points.

Class Participation

Attending the course lectures in mandatory for this course. Total class participation is worth **60** 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	200	200
Final Exam	1	200	200
Class Participation		60	60
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 regularly to get any update regarding this course.

COURSE OUTLINE AND CALENDAR

Complete Course Calendar

The Tentative course outline is mentioned below. The announcement dates may change depending on the pace of the course, lab assignments and overall student learning. All assignments, class tests, midterm and final exam due dates will be announced in the class.

Week	Date	Topic	Due
1	8-22	Introduction to Course/ Syllabus	
	8-24	Introduction to Computer Security, Concepts, and Approaches	
2	8-29	Introduction to Computer Security, Concepts, and Approaches	
	8-31	Networks and The Internet	
3	9-05	Networks and The Internet	Assignment 1
	9-07		Class Test 1
4	9-12	Cyber Stalking	
	9-14	Cyber Fraud and Abuse	
5	9-19	Denial of Service	
	9-21	Malware	Assignment 2
6	9-26		
	9-28	Ethical Hacking Techniques	Class Test 2
7	10-03	Encryption/ Decryption Techniques	

	10-05		
8	10-10	Hashing, Salting, Steganography, Cryptanalysis	
	10-12		**Midterm**
9	10-17	Firewalls, Antispyware, IDS, WIFI security	Assignment 3
	10-19		
10	10-24	Security Policies, Access Control, Disaster Recovery	
	10-26		
11	10-31	Data Classification, Important Laws	
	11-02		Class Test 3
12	11-07	Various Authentication Approaches including MFA, 2FA and continuous authentication	Assignment 4
	11-09		
13	11-14	Network Scanning and Vulnerability Scanning	
	11-15		
14	11-21		Assignment 5
	11-23	Operating System Security, Database and file security	Class Test 4
15	11-28		
	11-30		
16	12-05	Final Exam Overview	
	12-07	Final Exam	

INSTRUCTOR POLICIES

Policies related to grading

- All the assignments must be submitted before the posted deadline in Canvas Course Website unless arrangements are made beforehand (at least **48 hours before** the deadline and the students need to send an email explaining the situation and providing necessary documentation).
- 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 December 01, 2022. 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**) have to be completed.
  - Finally, approval of an incomplete grade (*I*) is up to the **department chair** and **college Dean**, not only to the course instructor.

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 assignments after **December 05, 2022** in the Fall 2022 semester.

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.

Online Proctored Testing

A&M-Central Texas uses Proctorio for online identity verification and proctored testing. This service is provided at no direct cost to students. If the course requires identity verification or proctored testing, the technology requirements are: Any computer meeting the minimum computing requirements, plus web camera, speaker, and microphone (or headset). Proctorio also requires the Chrome web browser with their custom plug in.

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 200 electronic databases containing approximately 400,000 eBooks and 82,000 journals, in addition to the 96,000 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 virtually through WebEx, Microsoft Teams or in-person at the library. Schedule an appointment here [https://tamuct.libcal.com/appointments/?g=6956]. 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]

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.