

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



CSCI 581 (01B) Network Security

COURSE SYLLABUS: Spring 2025

(Revision date: December 9, 2024)

INSTRUCTOR INFORMATION

Instructor: Jinoh Kim, Ph.D.

Office Location: CS/JOUR 217

Office Hours: TBD (thru online course page)

University Email Address: jinoh.kim@tamuc.edu

COURSE INFORMATION

Textbook(s):

- [WN] Network Security Essentials: Applications and Standards, William Stallings, 5th edition, Prentice Hall, ISBN 0133370437, 2013.

Software Required:

- Basic high-level programming

Optional Texts and/or Materials:

- Network Security: Private Communication in a Public World, C. Kaufman, R. Perlman, M. Spenciner, 2nd edition, Prentice Hall, ISBN 9780130460196, 2002.

Course Description

This course provides key concepts in computer and network security. Topics include cryptography including symmetric/asymmetric ciphers, cryptographic hash functions, message authentication codes, and digital signatures; mutual trust including key distribution and user authentication protocols; network and Internet security including transport security and IP security; and network system security including firewalls and intrusion detection systems.

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

1. Define basic computer and network security principles.
2. Evaluate applied cryptography techniques including symmetric ciphers, public key encryption, hash functions, and digital signatures.
3. State mutual trust methods including key distribution and user authentication protocols.
4. State network and Internet security techniques including transport security and IP security.
5. Explain system security tools for network security including firewalls and intrusion detection systems.

COURSE REQUIREMENTS

Prerequisites

CSCI 525 Networking 1, or instructor's permission required

Minimal Technical Skills Needed

- Knowledge of programming (Python)
- Basic knowledge of computer and operating systems
- Basic knowledge of data structure, algorithms, and statistics/probability

Instructional Methods

- Lecture-based
- Class attendance is mandatorily required
- Recorded (summary) lecture can be provided if needed

Student Responsibilities or Tips for Success in the Course

- *Participation*: Class attendance (mandatory) with active participation of class activities
- *Assignments*: On-time submission of assignments; Your answers should be typed and submitted in a single PDF file (unless otherwise instructed) – Any handwritten answers and non-PDF formatted submissions may not be graded resulting in a zero point.
- *Exams*: Well prepared for exams (with an ability to answer questions within the given exam time); The exams will be paper-based, closed-book/note tests.

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GRADING (Tentative)

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

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

Components	Weight	Remarks
Assignments	30%	Three assignments; (Refer to the assignment policy below for details)
Exams	60%	Two regular exams and one make-up exam (cumulative); (Refer to the exam policy below for details)
Class participation	10%	Class attendance and activities

Attendance Policy:

This is an in-person section and attending the class is mandatorily required. More than three absences (for any reason) may result in a failing grade. Two tardies will be counted as one absence.

Assignment Policy:

The deadline for the assignment can be extended with a 15% penalty per day, up to two days (48 hours). Any submission later than 48 hours after the deadline will not be accepted and graded. One lowest assignment score will be discarded from the final grade calculation.

No extension/resubmission will be allowed.

Exam Policy:

This course basically has two exams (Exam 1 and Exam 2). Optionally, you can take Exam 3 as a make-up exam in the Finals week. Exam 3 is a cumulative test. In case that you take Exam 3: The lower score from Exam 1 and Exam 2 will be discarded, and then Exam 3 score will be combined for the final grade calculation (i.e., exam score = (max(Exam 1 score, Exam2 score)+Exam3 score)/2).

No additional make-up exam will be given for any event.

Academic Misconduct:

The violation of academic integrity (including cheating and plagiarism) may cause a zero point on that work. Subsequent misconducts may result in a failing grade with the official filing of the case.

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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

YouSeeU Virtual Classroom Requirements:

<https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>

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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COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

N/A

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

N/A

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).
<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 [Procedure 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](#)

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<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

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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

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Artificial Intelligence and ChatBots

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.

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13.99.99.R0.03 Undergraduate Academic Dishonesty

<https://inside.tamuc.edu/aboutus/policiesproceduresstandardsstatements/rulesprocedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

13.99.99.R0.10 Graduate Student Academic Dishonesty

<https://inside.tamuc.edu/aboutus/policiesproceduresstandardsstatements/rulesprocedures/13students/graduate/13.99.99.R0.10.pdf>

COURSE OUTLINE / CALENDAR

Course schedule: The schedule may be subject to change.

WEEK NO.	CONTENT	READING
1	Course introduction and network security overview	Syllabus
2	Security concepts, attacks, mechanisms, services TCP/IP overview and services	[WN] Ch1 Appendix D
3	Symmetric encryption Pseudorandom numbers	[WN] Ch2
4	Stream ciphers Cipher block modes of operation	[WN] Ch2
5	Secure hash function Message authentication codes	[WN] Ch3
6	Public-key cryptography Digital signatures	[WN] Ch3
7	Exam I	--
8	Key distribution User authentication	[WN] Ch4
9	Transport-level security	[WN] Ch6
10	Wireless network security	[WN] Ch7
11	Email security (PGP, S/MIME)	[WN] Ch8
12	IP security	[WN] Ch9
13	Malicious software Propagation, payload, countermeasures, DDoS	[WN] Ch10

The syllabus/schedule are subject to change.

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14	Exam 2	--
15	Intrusion detection Firewalls	[WN] Ch11-12
16	Exam 3	--