

COSC 6378 Computer and Network Security

Fall, 2020

Time: Tuesday 07:05 pm – 9:45 pm

Section: 501

Room: ST 2121

Instructor: Dr. Quan Yuan

Office: ST 1106

Phone: (432) 552-2258

E-mail: yuan_q@utpb.edu

Office Hours: Thursday 7:00pm - 8:20pm
Monday, and Wednesdays 5:30pm - 7:05pm or by appointment

Textbook: *Network Security Essentials Applications and Standards, 5/E* by William Stallings. (ISBN-10: 0133370437 ISBN-13: 9780133370430) I may also distribute some papers and online materials for reading.

Course Goals: This course will focus on fundamental concepts and techniques used in computer and network security. Students will learn common threats and attacks in network systems, as well as practical experience in security. Various security measures such as cryptography will be investigated. The expected outcomes include:

- Students will be able to identify security breaches in a computer network
- Students will have an understanding of a variety of cryptographic algorithms and protocols underlying network security applications.
- Students will have an understanding of various networking security applications, such as key distribution, cloud security, wireless security, SSL.
- Students will have an understanding of system-level security issues, such as intruders, viruses, and worms.
- Students will be able to conduct fundamental research on network security, such as cloud security, wireless security, and security on android.

Prerequisite(s): COSC 6310 and COSC 6370 or permission of the instructor

Grades:	Attendance	(5%)
	Labs and Assignments	(14 %)
	Reading presentations	(7 %)
	Midterm Exam	(20 %)
	Final Exam	(20 %)
	Projects & Presentations	(34 %)
	Bonus	(up to 2 %)

Overall performance of the exams, assignments, and quizzes will determine your final letter grade.

FINAL LETTER GRADE

A = 90% - 100%

B = 80% - 89%

C = 70% - 79%

D = 60% - 69%

F = 0% - 59%

- **Last day to drop a course or withdraw from the University: 10/30/2020.**
- **Final Exam:** The final exam will be a comprehensive written exam.

Tentative Schedule

Date	Topic	Reading and Assignment
W1	<ul style="list-style-type: none"> - Syllabus - Class design explanation - How to read a paper - Final Project Release - Introduction to Computer Networking and Security 	How_to_read_a_paper Ch.1 – Introduction Final Project Instruction
W2	<ul style="list-style-type: none"> - Cryptography: Symmetric Encryption 	Ch.2 - Symmetric Encryption and Message Confidentiality Lab 1 Released
W3	<ul style="list-style-type: none"> - Cryptography: Hash Functions 	Ch.3 - Public-Key Cryptography and Message Authentication Student Presentation 1
W4	<ul style="list-style-type: none"> - Cryptography: Public-Key and Digital Signatures 	Ch.3 - Public-Key Cryptography and Message Authentication Student Presentation 2
W5	<ul style="list-style-type: none"> - Network Security: Key Distribution Using Symmetric Encryption - Intro to Kali 	Ch. 4 - Key Distribution and User Authentication Lab 1 Due Lab 2 Released Student Presentation 3
W6	<ul style="list-style-type: none"> - Network Security : Key Distribution Using Asymmetric Encryption 	Ch. 4 - Key Distribution and User Authentication Final Project Proposal
W7	<ul style="list-style-type: none"> - Network Security: Network Access Control - Midterm Review 	Ch.5 – Network Access Control and Cloud Security Lab 2 Due Student Presentation 4
W8	Mid-Term Exam	Content: Week1-Week7

		Student Presentation 5
W9	- Network Security: Cloud Security	Ch.5 – Network Access Control and Cloud Security Student Presentation 6
W10	- Network Security: Transport-Level Security	Ch.6 - Transport-Level Security Student Presentation 7
W11	- Network Security: Wireless Network Security I	Ch.7 – Wireless Network Security Final progress report
W12	- Network Security: Wireless Network Security II	Ch.7 – Wireless Network Security Student Presentation 8
W13	- System Security: Intruders	Ch.11 – Intruders Final progress report
W14	- System Security: Virus and Worms	Ch.10 - Malicious Software Student Presentation 9
W15	- Final Project Presentation - Final Exam Review	Final Project
W16	Final Exam	Content: Week9-Week15

Course Policies

Prerequisite Policy

- Students who are enrolled in the course and have not completed required prerequisites will not be allowed to proceed with a course.
- If students do not have the required prerequisites and do not drop the course voluntarily, they will be dropped administratively.

ADA (Americans with Disabilities Act) Policy

Students with disabilities that are admitted to The University of Texas of the Permian Basin may request reasonable accommodations and classroom modifications as addressed under Section 504/ADA regulations. Students needing assistance because of a disability must contact the Programs Assisting Student Study (PASS) Office no later than 30 days prior to the start of the semester. This information will be kept in strict confidence and has no affect on your admission to the University.

Attendance Policy

Attendance is **critical**. Students are expected to attend **all** classes. It is your responsibility to obtain any information given out in class. If you miss a class, you are responsible for all course materials presented and for all announcements and/or changes to the syllabus. Some materials presented in the lecture are not covered by the text.

Calculating Attendance:

- 1) perfect attendance: gain 1%
- 2) miss up to 2 classes: lose 0%
- 3) miss 3 classes: lose 1%
- 4) miss 4 classes: lose 2%
- 5) miss 5 classes: lose 4%

Important: *If you miss 6 or more classes (more than 3 weeks) without legal excuses*, you will receive a grade of "F" automatically. Late arrival or early departure of class meetings is considered as **unattended classes** unless there are valid excuses in advance.*

***Legal Excuses:** Your serious illness with your doctor's proof or the death of an immediate family member or the notified absences in advance. Other excuses will not be accepted.

Student Commitment Policy

- Each student is expected to read the text and related materials *before attending the class*.
- Each student should be prepared to spend an average of at least 8 hours a week outside of class to pass this class.
- Each student should have a his/her development environment:
 - Example: Computers, Application Programs, Operating Systems, Internet Service Providers (ISP), etc.

Courtesy Policy

Students should be courteous to their instructor and classmates. Any class disturbing behaviors will not be tolerated. No chatting during the class. All phones and pagers must be turned off during the class except an emergency case.

Degrading Policy

Classroom behavior should not interfere with the instructor's ability to conduct the class or the ability of other students to learn from the instructional program (*Code of Student Life*). Unacceptable or disruptive behavior will not be tolerated. Students engaging in unacceptable behavior may be instructed to leave the classroom. Inappropriate behavior may result in disciplinary action or referral to the University's Behavioral Intervention Team.

You will lose 5% of your overall performance if you do the following (each time):

1. Use the computer without instructor's permission.
2. Work on other materials (e.g. other class materials, job related works, internet surfing, etc.) during my class period.
3. Chatting, Eating, and Drinking (Water O.K.).
4. Any class disturbing behaviors.

Cheating Policy

Cheating on exams, quizzes, and all other assignments will not be tolerated. Also, collaboration and/or plagiarism are absolutely not tolerated. You must do your own work. All like papers will receive the same score – the grade of zero. The subject of scholastic

dishonesty is addressed more fully in the Student Guide, Appendix B.

Exam and Quiz Policy

- **Quizzes** will be announced or unannounced. There will be **no make-up quizzes without appropriate reasons**. Quizzes will last no longer than 30 minutes. Missed exams or quizzes will be assigned the grade of zero (0).
- **Requests for make-up exams** will be granted under the following conditions:
 1. There is a very good reason for missing the exam. You are not feeling ready is not an appropriate reason.
 2. Appropriate reasons for arranging a make-up exam will be accepted by prior arrangement.

Graded Assignments (Exams) Return Policy

- All graded assignments will be given back to the students **except the exams**. All graded assignments will be passed back to the students during the regular class periods. **It is the student's responsibility to receive all graded work at the time that they are passed back**. If a student misses a class on the day a graded assignment is returned, it is the student's responsibility to acquire the graded assignment as soon as possible.
- It is also student's responsibility to resolve all grading problems within one week of the return date of the graded assignment or exam. **No grade will be changed after one week of the return date of the graded assignment or test.**

Assignment Policy

Assignments will be written, programming, or research projects.

- All Assignments are to be submitted by the **end of class on the due date**. ***Late assignments will not be accepted unless you get the permission from the instructor.***
 - First page of your assignment should include your name, course number, section number, and assignment number. No credits will be given for assignment without this information. ***It is required that all assignments returned to students throughout the semester be retained until the end of the semester.***
 - ***For programming assignments***, students are required to have 2 USB (Universal Serial Bus) memories. One for working the project, and one for backing up the project.

- **Format Requirement:** The assignment must be typed using either a text editor or a word processor except diagrams, plots, and calculation formulas (these can be handwritten).
- **Identical or very similar assignment will receive a grade of zero.**
- Late assignments will be accepted with 10% penalty for each day late.
- **Homework:** Chapter exercises will be assigned, and later discussed in class, but **will not be submitted for credit**, unless it becomes necessary later in the semester. These exercises will help you **prepare for the quizzes and exams**.

Printing Policy

If the materials are posted on the Web site, it is your responsibility to print all materials from the Web Site before attending the class.

Disclaimer: Instructor reserves the right to modify the policies set forth in this document.