CS4371/CS5378 Computer System Security
Fall 2018

1. Course Information

Class Time: TH, 12:30pm-1:50pm
Class Location: DERR 234
Office Hours: T 10:30am-12:30pm, 3:20pm-6:20pm

Instructor: Qijun Gu
Office: 309E Comal
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Phone: 512-2453518

2. Objective and Content

Understand the basic security problems in computer systems.
Understand both security theories and security practices.
Understand design and implementation of secure computer systems.
Understand cryptography and the usage of cryptography.

3. Lectures

Topic lectures:
Introduction of security (about 1 week): concept of security and insecurity; technical, operational and human threats.
Security policies and security levels (about 1 week): confidentiality policies; integrity policies
Access control (about 2 weeks): principle of enforcing security policies; identity: subject, object and role; mechanisms and practice: firewall.
Software security (about 3 weeks): malicious logic; buffer overflow; vulnerability analysis
Cryptography and applied cryptography (about 4 weeks): ciphers: encryption and decryption; authentication; key management; cryptography practice.
System security (about 3 weeks):intrusion detection; network security: DoS, spoofing; auditing

Programming lectures:
Network programming: eavesdropping for project 1

System programming: exploitation for project 2
Crypto programing: crypto library for project 3
Others: in class demonstration

4. Assignments and Exams

One homework every two weeks
Three lab projects
Midterm exam on October 16
Final exam on December 13, 11:00am-1:30pm

5. Grading

Homework:	30%
Project :	30%
Midterm:	20%
Final:	20%

6. Course Policy

Drop: I will give you W. **YOU MUST GO TO THE REGISTER OFFICE TO OFFICIALLY WITHDRAW FROM THIS CLASS BEFORE THE LAST DROP DAY.**

"The “I” grade may be assigned when, due to unusual circumstances beyond the student’s control, a significant portion of a course, such as a term paper or final examination, has not been completed."

Exams: Students can bring one piece of note paper for mid and final exams. **NO MAKEUP EXAM OR MAKEUP HOMEWORK OR MAKEUP PROJECT.**

Submissions: Hard copy submissions of homework and project reports are required. **NO EMAIL SUBMISSION.**

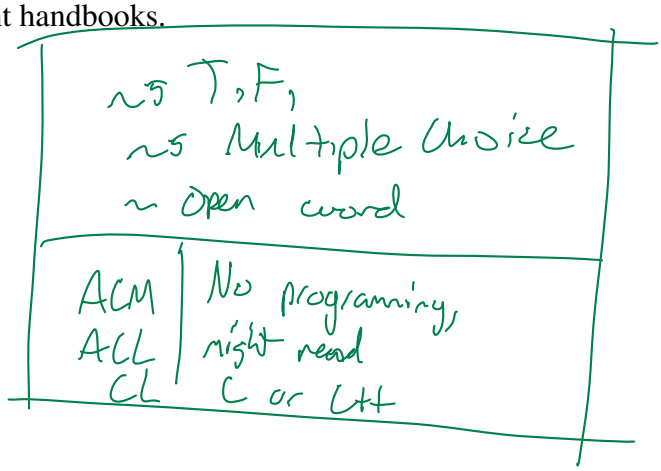
Late Policy: Starting right after the required submission date of every assignment, 20% of the grade will be deducted per day up to two days. NO points will be given to submissions more than two days late.

Attendance: Attendance is highly **RECOMMENDED**. Each student is responsible for his/her

missed classes and exams.

Honesty: **NO** copying or sharing any code and writing in any assignment, project or exam with anyone or from any source.

This course complies with all academic policies of Texas State University. Do check these policies through university web sites and student handbooks.



7. Textbook

Type: Recommended
Title: Introduction to Computer Security
Year: 2004
Edition: 1st
Author: Matt Bishop
Publication: Addison-Wesley
ISBN: 978-0321247445

8. Class Schedule

Weeks	T	Content	Lecture	H	Content	Lecture
1	08/28/18	syllabus	lec00	08/30/18	introduction	lec01
2	09/04/18	proj1		09/06/18	proj1	
3	09/11/18	introduction	lec01	09/13/18	access control	lec02
4	09/18/18	access control	lec03	09/20/18	access control	lec03
5	09/25/18	policy	lec04	09/27/18	policy	lec04
6	10/02/18	proj2		10/04/18	proj2	
7	10/09/18	malicious logic	lec05	10/11/18	**reivew**	lec05
8	10/16/18	**midterm**		10/18/18	malicious logic	lec05
9	10/23/18	malicious logic	lec05	10/25/18	malicious logic	lec05
10	10/30/18	malicious logic	lec05	11/01/18	proj3/crypto	lec06
11	11/06/18	crypto	lec06	11/08/18	crypto	lec06
12	11/13/18	crypto	lec06	11/15/18	crypto	lec06
13	11/20/18	key	lec07	11/22/18	**thanksgiving**	
14	11/27/18	key	lec07	11/29/18	auth	lec08
15	12/04/18	ids	lec09	12/06/18	review	lec09