

CS4320 Computer and Network Security

Fall 2019 Syllabus

Textbook: Boyle, Randall, Raymond Panko, Corporate Computer Security, 4th ed., Prentice Hall, 2015, ISBN 0-13-3545199.

You can rent this book from [amazon.com rental](#)ⁱ for \$39. [Amazon eTextbook](#)ⁱⁱ purchase and rental prices are \$90 and \$60 respectively. E-Book rental for 180 days from [vitalsource](#)ⁱⁱⁱ is \$60. In addition, many other resources, such as textbooks and resources from the Internet, will be used.

Instructor: Lopamudra Roychoudhuri

E-mail: lroychoudhuri@angelo.edu

Office: MCS 205E

Campus Phone: (325) 486-5448

Class Times: Section 010 – TR 12:30-1:45 pm, Section 020 – TR 2:00-3:15 pm

Classroom: MCS 114

Course Web Site: Blackboard

Office Hours: MW 2:00-5:00 pm, TR 4:00-5:00 pm, F 2:00-4:00 pm

Prerequisite:

None.

Course Objectives:

This course provides an in-depth look at the security risks and threats to an organization's electronic assets, and an overview of components used in an enterprise security infrastructure. The course focuses on the topics of threat environment, security policy and planning, cryptography, secure networks, access control, firewalls, application security and data protection. Topics will include theoretical background, as well as practical techniques to secure an enterprise network. The course provides demonstrations and exercises on various offensive and defensive security concepts.

Student Learning Goals:

Students who successfully complete this course will have the ability to:

1. Demonstrate understanding of network security terminology and concepts,
2. Demonstrate understanding of security technology and devices, acquired by hands-on experience on threats to computers and networks, and measures of security defense,
3. Apply security principles to business scenarios,
4. Discuss current ethical issues involved in network and computer security,
5. Research topics, solve problems and create solutions in a seminar environment,
6. Deliver a team project that will allow the student to study some aspect of the “real world” computer and network security in detail beyond what is covered in class.

Grading:

Grading Criteria	Dates	Weights	Goals Assessed
Assignments	Daily/Weekly/biweekly	30%	1 thru 4
Project		35%	5 thru 6
Exam 1	9/24/19	15%	1 thru 4
Exam 2	11/12/19	20%	1 thru 4

GRADE	PERCENT
A	90 - 100
B	80 - 89
C	70 - 79
D	60 - 69
F	0 - 59

Week by week tentative schedule:

Week	Date	Topics
1	8/27, 8/29	Module 1: Threats and Defense Planning
2	9/3, 9/5	Module 1: Threats and Defense Planning cont.; Module 2: Networking Recap, Project topics of interest list due – 9/5
3	9/10, 9/12	Module 2: Networking Recap cont., Write up on topics of interest due- 9/12
4	9/17, 9/19	Module 2 cont., Project topic selection per team – 9/19
5	9/24, 9/26	Exam 1 on 9/24; Module 3: Offensive Security - Malware, Scanning Project proposal due – 9/26
6	10/1, 10/3	Module 3: Malware, Scanning cont.
7	10/8, 10/10	Module 3: Malware, Scanning cont.
8	10/15, 10/17	Module 4: Offensive Security – Denial of Service
9	10/22, 10/24	Module 4: Offensive Security – Denial of Service cont.
10	10/29, 10/31	Module 5: Defensive Security at Link Layer, Switch Security; Interim project report due – 10/29
11	11/5, 11/8	Module 5: Switch Security cont.
12	11/12, 11/14	Exam 2 on 11/12; Module 6: Defensive Security at Network Layer, Firewalls
13	11/19, 11/21	Module 6: Firewalls cont.
14	11/26	Module 7: Defensive Security at Transport and Application Layers, Cryptographic Systems
15	12/3, 12/5	Module 7: Cryptographic Systems cont.
16	Section 020 - 12/10 (Tue) 1:00-3:00 pm Section 010 - 12/12 (Thu) 10:30 am-12:30 pm	Project presentations; project reports due

Class Policies:

TEAMS

We will form teams of 2 or 3. The teams will be chosen on the first day of class, and will be maintained till the end of semester.

ASSIGNMENTS

- There will be many kinds of assignments that you will complete in and out of class.
- Quizzes:

You will complete some reading from the textbook or other sources prior to every class session. The reading will be announced beforehand. This is to ensure that you are familiar with the topics that will be discussed in the class. This may be validated by the quizzes that may be team-based or individual. The grade from the quizzes will constitute 10% of the total Assignment grade.

- Assignments: these fall in three categories:
 - In-class Assignments: We will discuss topics in class and work on assignments. You will be able to collaborate with your fellow students in order to complete these. Assignments that could not be completed in class will be taken out-of-class and turned in. The grade from these assignments will constitute 20% of the total Assignment grade.
 - Homework Assignments: the purpose of the homework assignments is to give you individual out-of-class practice on the topics that you are learning, and to explore some ideas more deeply. The grade from the homework assignments will constitute 50% of the total Assignment grade.
 - Short Presentations: You may research on announced topics individually or in your team and present your findings. If team-based, all team members will get the same grade under normal circumstances. You will also submit a PowerPoint presentation. The grade from the presentation assignments will constitute 20% of the total assignment grade.
- All assignments, unless otherwise specified, must be submitted to Blackboard containing your name, course name, the title of the assignment and the due date.
- *No late assignment will be accepted. No e-mail or in-person submission is accepted.* There are no exceptions to this rule.
- All homework assignments should be the work product of each individual. Cheating occurs when a student either submits work for a grade that is not entirely due to his/her own effort or allows others to use her/his work. Cheating occurs when a student submits work product that is copied from another student. Cheating on an assignment or exam will result in a failing grade for the course. No student shall look towards the work of any other student during exams as it shall be construed as cheating.

- **Academic Honor Code:** Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is available on the web at [Academic Honor Code](#)^{iv} in [Student Handbook](#)^v. You should familiarize yourself with it. If a student violates this policy in any way, the student may receive a sanction of failure on the assignment/exam or failure in the course. If you have questions about appropriate citations, please ask.

TEAM PROJECT

Each team will select a topic that will allow the group to study some aspect of the “real world” security topic in detail beyond what is covered in class. The outcome of the project will be a project report as well as a class presentation in the finals week. You will submit your own report that clearly shows your contributions to the project. Each team will prepare a 15-20 minute presentation and answer related questions.

EXAMS

All exams will be comprehensive. All students must take all the exams at the scheduled times. There are no makeup exams. Only exception will be student absence for observance of religious holy day (see below).

ATTENDANCE

Attendance is mandatory (*no excused absences*) and roll will be taken.

GRADEBOOKS

During the course of the semester, you are expected to monitor your performance on assignments and exams by accessing your grades online. It is your responsibility to: (1) insure that correct entries have been made into the gradebook, and (2) be aware of your performance in the class. Grade percentages are shown on this syllabus so you can compute your own grade standing as the semester progresses.

E-MAIL

You are required to obtain an e-mail account. If you have any question about the course or need assistance, please contact me in person or by telephone during office hours, or by e-mail at any time.

LAB POLICY

No food or drinks are allowed in the lab.

General Policy Statements

Academic Accommodations:

Persons with disabilities that may warrant academic accommodations must contact the Student Life Office, Room 112, University Center, in order to request such accommodations prior to any accommodations being implemented. You are encouraged to make this request early in the semester so that appropriate arrangements can be made.

Add/Drop Dates

Students may add this course up to August 29, 2019.

Students may drop this class or withdraw from the university until October 31, 2019.

Student Absence for Observance of Religious Holy Day

1. "Religious holy day" means a holy day observed by a religion whose places of worship are exempt from property taxation under Texas Tax Code §11.20.
2. A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.
3. A student who is excused under section 2 may not be penalized for the absence; however, the instructor may respond appropriately if the student fails to complete the assignment satisfactorily.

Modifications to the syllabus

The instructor and the university reserve the right to modify or change the syllabus (schedule, course requirements, grading policy, etc.) as the curriculum and/or program require(s).

ⁱ https://www.amazon.com/Corporate-Computer-Security-Randy-Boyle/dp/0133545199/ref=sr_1_1?ie=UTF8&qid=1534197620&sr=8-1&keywords=boyle+and+panko

ⁱⁱ https://www.amazon.com/Corporate-Computer-Security-Randall-Boyle-ebook/dp/B00HSTI576/ref=mt_kindle?encoding=UTF8&me=&qid=1534197620

ⁱⁱⁱ <https://www.vitalsource.com/products/corporate-computer-security-randall-j-boyle-v9780133803310>

^{iv} <https://www.angelo.edu/student-handbook/code-of-student-conduct/misconduct.php>

^v <https://www.angelo.edu/student-handbook/>