# COSC 3371 Cybersecurity: About the Course

Stephen Huang



## Content

- Basic information
  - Course organization and help
  - Materials, textbooks, references
  - Grading policy (homework and exams)
  - Prerequisites
  - Etc.



## Course Information

- Lectures
  - Face-to-Face, Zoom if necessary
- Course Material
  - Website: Everything except homework submission
  - Canvas: Homework submission
  - Microsoft Teams: not used



## Learning Objectives

- This course provides a broad introduction to cybersecurity, including cryptography, network security, and system security.
- After completing the course, students will be familiar
  - with the theoretical foundations of security (e.g., foundations of cryptographic algorithms),
  - with security protocols (e.g., SSL), and
  - with practical attacks and defense techniques (e.g., Intrusion Detection, Malware, software vulnerability exploits, and firewalls).

## Concepts vs Implementations

- We will focus on the concepts instead of the actual detail implementation of an algorithm.
  - There are multiple implementations.
  - Standards are constantly updated.





## Prerequisites

- Official Prerequisite: Operating Systems (COSC 3360)
- Programming skills & languages
  - basic C and Java or Python
  - very basic SQL, Javascript, and PHP
- Basic network and web knowledge
  - IP, TCP, UDP, DNS, HTTP, HTML, SMTP
- Mathematical background
  - basics of probability and number theory

lectures will contain short tutorials on these topics





## Assignments and Exams

- 4-5 Assignments + Attendance (~40%)
- Midterm exam (~20%)
- Final Exam (~40%)

- Subject to some changes.
- The new final exam uses a 2-hour time block, which includes 1 hour and 45 minutes of testing time and 15 minutes of passing time.





## Grading Scale

This is my tentative guaranteed grading scale. The grades may be curved and are likely to be more generous than this.

| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| 90 | | A- | | | | A | | | | |
| 80 | | B- | | | B | | | | B+ | |
| 70 | | C- | | | C | | | | C+ | |
| 60 | | D- | | | D | | | | D+ | |
| < 60 | | | | | F | | | | | |

## Textbooks Etc.

- Textbooks (Recommended)
  - Charles P. Pfleeger, Shari Lawrence Pfleeger, Jonathan Margulies, "Security in Computing" (5th Edition), Prentice Hall Press, 2015
  - William Stallings, "Cryptography and Network Security: Principles and Practice" (5th, 6th, or 7th Edition)
- The lecture slides will be available as PDF files.



## Honor Code

- Students may be asked to sign an honor code statement as part of their submission of any graded work including but not limited to projects, quizzes, and exams:

  *"I understand and agree to abide by the provisions in the University of Houston Undergraduate Academic Honesty Policy. I understand that academic honesty is taken very seriously and, in the cases of violations, penalties may include suspension or expulsion from the University of Houston."*



## Attendance

- Regular attendance and participation in class is required and may be counted toward the course grade.
- Students are expected to spend at least 3 hours on the course material for every 1 hour of class time, i. e., 9 hours for this course.
- Students may not record or livestream any part of the class or make/distribute screen captures without the advanced written consent of the instructor.



## Acknowledgement

- The lecture notes are based on Dr. Aron Laszka's notes from the previous semesters.
- Some materials are taken from reference books and other sources.