

# CYB 3073: Introduction to Cyber Security

## Fall 2023

### Instructor Information

*Name:* Andrew Morin  
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*Office:* Keplinger Hall L127  
*Hours:* T/TH 12:30pm - 1:30pm or by appointment

### Class Information

*Dates:* 8/21/2023 – 12/16/2023  
*Time:* Tuesday/Thursday, 11:00am – 12:15pm  
*Classroom:* KEP 3140

### Course Description

Introductory survey of cyber security concepts and topics. Topics include protection goals of confidentiality, integrity and availability, encryption, security economics, cyber war, enterprise security, privacy, network security, wearable security and privacy, and end user education.

### Course Objectives

Upon completion of this course, students shall be able to:

- explain how canonical threats to cyber security work,
- describe the operation of controls that mitigate cyber security risks,
- demonstrate attacks affecting systems, web, and network security,
- relate economic explanations of cyber security shortcomings to real-world scenarios,
- recognize the heuristics and biases that affect their own cybersecurity decision-making,
- be confident in discussing timely cybersecurity events with colleagues, and
- seek out and evaluate information that affects personal and organizational cybersecurity.

### Textbook & Materials

None

### Academic and Computational Prerequisites

None

## Access to Course Materials

HARVEY is the learning/content management system used in this course. Although course materials may be distributed in class, all such materials, including assignments, schedules, etc., will always be available to students through HARVEY. You can log in to HARVEY at <http://HARVEY.utulsa.edu> using your University of Tulsa username and password.

## Student Tasks and Deliverables

- **Labs** - There will be approximately 6 labs comprised of hands-on experiences involving configurations, vulnerabilities, and defenses. Students will log onto remote virtual machines hosted at TU. Instructions on how to use the system will be posted on Harvey.
- **Exams** - There will be two non-comprehensive exams. Exams are open-book, open-notes and open-Internet unless otherwise announced.
- **Retention Quizzes** - Course material (e.g., videos, reading) for each class is posted on Harvey under "Course Content". Students are expected to review this content **before** class. To ensure that happens, short retention quizzes must be completed on Harvey before most classes. Class time is reserved for discussing questions about course material, planned discussions, and lab time.
- **Class Participation** - Students are expected to attend class and participate in class discussions.

## Late Work

Unless you have worked out an arrangement with me **prior to the due date**, a late assignment will result in a 10 percent deficit per 24 hours up to 5 days. Anything turned in over five days late is an automatic zero. Some exceptions to this policy:

- If you have an emergency, such as a serious illness or a death in the family, reach out to me as soon as possible so that we can make a plan.
- If there are unforeseen circumstances which affect everyone, such as a power outage or wind storm, I will make an announcement about any extension provided.

## Grading

The course grade is determined by the following components:

Labs	25%
Exams	40% (20% Each)
Retention Quizzes	35%

## Grade Scale

Final grades will be assigned according to the following scale:

Letter Grade	Semester Average
A	90 – 100
B	80 – 89
C	70 – 79
D	60 – 69
F	0 – 59

### **Instructor Availability and Response Time**

Please feel free to email your instructor directly with questions of a personal nature, questions about grades, requests for help, or other issues that are not appropriate for the rest of the class to hear/read. Email is checked regularly, and responses are sent as quickly as possible.

Please be aware that grading of written assignments and homework takes time, in the same way, that it takes time for students to prepare them. The instructor's goal is to promptly give feedback on all assignments, but there may be some assignments that require considerable time to grade. It is important to make sure that everything each student prepares and submits is thoughtfully and carefully considered.

### **Academic Integrity**

In keeping with the intellectual ideals, standards for community, and educational mission of the University, students are expected to adhere to all academic policies. Cheating on examinations, plagiarism, and other forms of academic dishonesty violate both individual honor and the life of the community, and may subject students to penalties including failing grades, dismissal, and other disciplinary actions. For full details please see:

#### [Undergraduate Academic Misconduct Policy](#)

Any student found to have committed academic misconduct activities will, in the first instance, receive a grade of 0 on the assignment or exam. In the second instance, the student will receive a failing grade for the course. Note that this includes copying code or writing from the Internet or other resources without attribution. Note that University policy requires me to notify the Associate Dean for Academic Affairs in the event of identifying academic misconduct. Additionally, utilizing large language model (LLM) services such as ChatGPT is not permitted when writing code or preparing answers to assigned work unless otherwise specified by the instructor. Utilizing LLMs without attribution will be treated as academic misconduct.

### **Appeals Policy for Grades Academic Decisions and Student Complaints**

The Collins College of Business has procedures in place regarding student complaints and appeals of grades or academic decisions. These can be accessed through the following web address:

<https://univoftulsa.sharepoint.com/sites/AcademicAffairs/academicpolicies/SitePages/Appeal%20Policy%20for%20Grades%20and%20Academic%20Decisions%20for%20Undergraduate%20Students.aspx>

### **Student Success Team statement**

All students are encouraged to familiarize themselves with and take advantage of services provided by The Student Success Team, including Student Access, Student Success Coaching, and tutoring. To request a student success coach to improve study skills, email [successcoaches@utulsa.edu](mailto:successcoaches@utulsa.edu). To request a tutor, email [tutoring@utulsa.edu](mailto:tutoring@utulsa.edu).

### **Student Access Statement**

Students who have or believe they may have a disability and would like to set up accommodations should contact Student Access within the Student Success Team to discuss their needs and facilitate their rights under the Americans with Disabilities Act and related laws. Student Access provides private consultations to any student. Contact Student Access staff by email at [studentaccess@utulsa.edu](mailto:studentaccess@utulsa.edu) or by phone at 918-631-2315. The online application for accommodations may be obtained here. Student Access staff will assist students in the implementation of approved accommodations. Students who qualify for accommodations should meet with the instructor privately (during office hours or by appointment) as soon as possible to arrange for their needs and obtain support for the class.

### **Online Access Request statement**

Many in-person courses are designated as such because they require in-person elements that cannot be substituted. If you get ill and are attending in-person classes, please fill out the Online Access Request form and Student Success will work with you and your instructors to determine if there is a way to meet course expectations online.

### **Counseling & Psychological Services Center and the Alexander Health Center**

Should you need some help with stress or need some counseling to get you through a difficult situation, you should get in touch with the Counseling & Psychological Services Center:

<http://utulsa.edu/campus-life/counseling-services>

If you are experiencing health issues, then please take advantage of the services provided by the Alexander Health Center:

<http://utulsa.edu/campus-life/alexander-health-center>

Students often try to “push their way through a health issue or an emotional issue, and are often not successful which results in diminished classroom performance. I would encourage to address problems before they negatively impact your performance and your life by contacting the appropriate office listed. If you are ill and forced to miss class, you must notify me in writing—this includes exam periods and other assignments.

### **Know Your Title IX**

Sexual misconduct is prohibited by Title IX of the Educational Amendments of 1972 (“Title IX”) and will not be tolerated within the TU community. Sexual misconduct encompasses all forms of sex and gender-based discrimination, harassment, violence, and assault, as well as dating violence, domestic violence, interpersonal violence, stalking and sexual exploitation. If you or someone you know has been harassed, assaulted, or stalked, or if you have questions about violence prevention resources available to you, please contact any of the following campus and community resources:

<b>Service</b>	<b>Phone Number</b>
Title IX Coordinator	918-631-4602
Office of Violence Prevention	918-631-2324
Office of Violence Prevention	918-631-2324
TU Counseling and Psychological Services	918- 631-2241
Campus Security	918-631-5555
Domestic Violence Intervention Services	918-585-3163 or 918-743-5763
Tulsa Police Department	918-596-9222 or 911 (emergency situations)

For more information about your rights under Title IX, please visit our Policies and Laws page <https://utulsa.edu/sexual-violence-prevention-education/policies-laws/> on the TU website or contact the Title IX Coordinator. Every student on our campus has the right to resources. Please come forward and ask questions, report, and help us eradicate sexual misconduct and interpersonal violence by stopping the silence surrounding it.

## Important Dates

Last day to add a class	August 29
Labor Day	September 4
Last day to withdraw from a class without academic penalty	September 8
Last day to sign up to audit a class	September 8
No withdrawals after this date	November 10
Last day to declare Pass/Fail with Center for Academic Advising	November 10
Thanksgiving Break	November 20 - 24
Last day of classes	December 4
Reading Days	December 5 - 6
Final Examinations	December 7 - 8, 11 - 14
Grades due at noon	December 19

## Tentative Schedule

Module	Week	Topic(s)	Assignment(s)
1	Aug 22 & 24	Introduction Security Definitions Threats, Concepts, and Discussion	RQ-1
2	Aug 29 & 31	Identification Authentication Authorization Privacy	RQ-2
3	Sep 5 & 7	Intro to Linux VM Infrastructure	RQ-3
4	Sep 12 & 14	Software Security •Canonical Vulnerabilities •Countermeasures Malware Overview	Lab-1 RQ-4
5	Sep 19 & 21	Access Control •Linux File System •POSIX Permissions	RQ-5
6	Sep 26 & 28	Security Economics •Incentives & Market Failures •Economics: Policy Interventions •Psychology: Heuristics & Biases	Lab-2 RQ-6
Exam 1	Oct 3 & 5	Review	Exam 1
7	Oct 10 & 12	Cryptography •Threat Models & Policy •Diffie-Hellman Key Exchange •Asymmetric & Symmetric Cryptography	RQ-7
8	Oct 17 & 19	Network Security •Network Attacks •Border Gateway Protocol Security	RQ-8
8	Oct 24 & 26	Network Security •Continued	
9	Oct 31 & Nov 2	Web Security •HTTPS, SQL Injection, XSS	RQ-9 P1
9	Nov 7 & 9	Web Security •Continued	RQ-9 P2
10	Nov 14 & 16	Cyber Security and the Law •Computer Fraud and Abuse Act •Defender Constraints •Intellectual Property Law	Lab-3 RQ-10
THANKSGIVING BREAK			
11	Nov 28 & 30	Privacy Cyber War	RQ-11
READING DAYS			
Exam 2	Dec 13	Final Exam •9:00am - 11:25am	Exam 2