



## **COURSE SYLLABUS INTRODUCTION TO CYBERSECURITY COSC 40053-045**

<b>Semester and Year:</b>	Spring 2025
<b>Number of Credits:</b>	3
<b>Course Component Type:</b>	LEC
<b>Class Location:</b>	TUC 246
<b>Class Hours:</b>	TR 12:30- 01:50 PM
<b>Instructor:</b>	Dr. Robin Chataut
<b>Office Location:</b>	TUC 341G
<b>Office Hours:</b>	TR 02:00 PM- 3:30 PM
<b>Email:</b>	<a href="mailto:robin.chataut@tcu.edu">robin.chataut@tcu.edu</a>
<b>Preferred Method of Contact:</b>	Email
<b>Response Time:</b>	Emails will be responded within 24 hours.

### **Final Evaluative Exercise & Important Dates**

FINAL EXAM: MAY 8 11:00 AM – 1:30 PM
Midterm Exam: Announced in the class/class announcement
Last Day to Drop: Tuesday, April 1
Last Day to Select P/NC: Monday, April 21

Other important dates will be communicated via class announcements.

### **Grader**

TBD

### **Student Resources & Policy Information**

Click or scan QR code for resources to support you as a TCU student.  
Please note section on [Student Access and Accommodation](#) and [Academic Conduct & Course Materials Policies](#).



## COURSE DESCRIPTION

### Description

This course covers fundamental principles, concepts, and common practices of computer and network security, basic cybersecurity concepts, including risk management, threats, vulnerabilities, and defense techniques. Topics include CIA (Confidentiality, Integrity, and Availability), threats, attacks, defense, access control and password management, cryptographic algorithms, security protocols, threats/attacks, security policies, incident-handling and contingency planning, risk assessment, and management.

### Prerequisites

MATH 20123, and COSC 30203 or CITE 30103

## COURSE MATERIALS

### Required Materials

- **Textbook:** None

### Supplementary Resources

- CompTIA Security+ Get Certified Get Ahead: SY0-701 Study Guide, by Joe Shelley (Author), Darril Gibson, 979-8988984801 (highly recommended)
- Cryptography and Network Security: Principles and Practice, 7th Edition; Author: William (Optional)
- Lecture notes/slides will be made available on TCU Online.

**Device Information:** Students **MUST** be able to access laptops or desktops to complete all assignments. The operating system can be Windows/macOS/Linux.

## LEARNING OUTCOMES

### Course learning outcomes

1. Reasonable understanding of the fundamentals of the cybersecurity domain and related issues
2. Identify and define key knowledge areas of cybersecurity.
3. Explain what to protect, why to protect, and create a plan to protect in the cyber world.
4. Describe cybersecurity in the real world and apply their knowledge to scenarios to reflect technology's latest capabilities and trends.

5. Explain concepts related to applied cryptography, including plain text, cipher-text, symmetric cryptography, asymmetric cryptography, digital signature, message authentication code, hash functions, and modes of encryption operations.
6. Explain the concepts of malicious code, including viruses, Trojan horses, and worms.
7. Describe threats to networks, including sniffing and spoofing, and explain techniques for ensuring network security, including encryption, authentication, firewalls, and intrusion detection.

## **COURSE REQUIREMENTS**

### **Assessments**

#### **Homework and Lab Assignments**

- Homework will be assigned based on material from the lectures. These assignments are meant for you to become familiar with the course material.
- Labs are an integral part of this course and are intended to provide experience in the application of the design techniques discussed in the lectures.

#### **In-Class Activities/Quizzes/Participation**

- These grades will be based on in-class assignments or short quizzes, which may be given at any time during the class without any prior notice.

#### **Research Seminar:**

- Choose a topic of interest and present your findings and research to the class. This component is a critical part of your learning experience, as it allows you to explore and demonstrate your understanding of the course material in depth. The project/seminar emphasizes practical application, critical thinking, and effective communication of ideas, preparing you for real-world challenges in the subject area.

#### **Exams**

- There will be two exams, 1 midterm (10%) and 1 final (15%). All the exams will be taken in the lecture classroom.
- The date of the midterm exam will be posted on TCU online and announced in class at least one week prior to the date of the exam. A make-up exam will be given at the discretion of the instructor when a student misses an exam with an

excused absence. Unexcused absences on the date of an exam may result in a grade of 0 for the missed exam, so every effort should.

- The final exam will be comprehensive (covering the full semester's materials).
- Rescheduling a final exercise must be made one week prior to the last day of classes. Rescheduling of finals is permitted for 1) graduating seniors whose faculty members must submit final grades by Wednesday 5pm of finals week, 2) students with more than two finals in a 24-hour period rule and 3) students for whom a final examination conflicts with a major religious holiday or custom. Unless the student is graduating, the exam must be taken during final examination week.

## **Grading Policy**

### **Late Work**

This class has no late assignment policy. Please ensure that you complete and submit all assignments on time. No late assignments will be accepted. If you encounter any extenuating circumstances and need an extension, please email me as soon as possible to discuss your situation.

### **Participation, Engagement & Attendance**

Class attendance is regarded as both an obligation and a privilege. All students are expected to attend each class meeting. I will not take formal attendance. Please note that if you miss an in-class activity or quiz due to class absence, there will be no make-up opportunity.

A student who misses class is still responsible for finding out what was discussed, learning the material covered, and obtaining the homework assigned on the missed day. The instructor is not responsible for re-teaching material missed by a student who did not attend class. Therefore, each student is accountable for and will be evaluated on all material covered in this course, regardless of attendance. If there are extenuating circumstances preventing you from attending the class, please notify your instructor so that you can work together to ensure your success in learning the material.

Because it is considered an infringement on student privacy for me to have access to student medical records, I cannot accept medical documentation to justify absences. If you have a legitimate reason for your absence and want to provide verification, please access the Absence Documentation Form [here](#).

## Course Assignments and Final Grade

Assignments	Percentage
Homework and Labs	55%
Exams: Midterm (10%), Final (15%)	25%
Research Paper/Seminar	10%
In-Class Activities/Quizzes/Participation	10%
Total	100

### Grading Scale

Grade	Score
A	94–100
A-	90–93.99
B+	87–89.99
B	84–86.99
B-	80–83.99
C+	77–79.99
C	74–76.99
C-	70–73.99
D+	67–69.99
D	64–66.99
D-	60–63.99
F	0–59.99

The final course grades will **NOT** be curved with no exceptions. Please also be aware that extra credits/work will **NOT** be given with no exceptions.

## Course Policies

### Academic Integrity

Academic integrity is central to the mission of educational excellence at TCU. Each student is expected to turn in work completed independently, except when assignments specifically authorize collaborative effort. It is not acceptable to use the words or ideas of another person--be it a world-class philosopher or your lab partner--without proper acknowledgment of that

source. This means that you must use footnotes and quotation marks to indicate the source of any code snippet, phrases, sentences, paragraphs, or ideas found in published volumes, on the internet, or created by another student. Anything generated by AI tools like ChatGPT, Google Bard, Bing, etc. if used for class work, must be clearly mentioned. I have a zero-tolerance policy for cheating, and all violations will result in substantial penalties. Any form of academic dishonesty may be penalized with a failing grade ("F") in the class. Additionally, any violations of the Code may be referred to the Office of Academic Innovation and Effectiveness for further disciplinary action. If you have any doubts or questions about what constitutes academic misconduct, please do not hesitate to contact me. For further clarification of university policies regarding academic integrity, please read [Academic Conduct & Course Materials Policies](#).

## Technology Policy

### Artificial Intelligence (AI) Ethical Considerations and Consequences for Misuse

The inappropriate or unauthorized use of AI-generated content may be academic misconduct and/or a violation of discipline-specific professional ethics. Such misuse of AI or other assignment-help tools will be handled according to TCU's Academic Conduct Policy or other relevant policies and may result in sanctions, including failing the course, program dismissal, suspension, or expulsion.

## COURSE SCHEDULE (TENTATIVE)

This tentative calendar represents current course plans. This plan may be modified as the course progresses should the instructor deem it necessary and will be communicated via course announcement.

Date	Chapter/Assignments
Week1	Chapter 1: Fundamentals of Cybersecurity
Week2	Chapter 1: Fundamentals of Cybersecurity Lab#1, IC#1
Week3	Chapter 2: Network and Security
Week4	Chapter 2: Network and Security Lab#2, IC#2
Week5	Chapter 3: Cryptography Lab#3
Week6	Chapter 3: Cryptography IC#3
Week7	Chapter 4: Cyber Threats Lab#4
Week 8	Chapter 4: Cyber Threats

	Midterm Exam (Tentative)
<b>Week9</b>	Chapter 5: Risk Assessment and Management Lab#5 Research Seminar Paper Topic Due
<b>Week 10</b>	<b>Spring Break</b>
<b>Week11</b>	Chapter 6: Risk Assessment and Management Lab#6
<b>Week12</b>	Chapter:7 End Point Security Lab#7, IC#4
<b>Week13</b>	Chapter 8: Physical Security Lab#8
<b>Week14</b>	Chapter 9: Standards and Policies IC#5
<b>Week 15</b>	Student Research Seminar
<b>Week 16</b>	Student Research Seminar/ Research Paper Due
<b>Week 17</b>	Final Exam