

**CSCE 4555/5555 – Computer Forensics**  
**Fall 2025**

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*Please note that this is a cross-listed course (offered to both undergraduate and graduate students). Unless otherwise mentioned, the syllabus below applies to everybody.*

**Class Location/Time:** Fridays 8:30 AM - 11:20 AM (Aug 18, 2025 - Dec 12, 2025) in NTDP B190

**Instructor:** Dr. Cihan Tunc

**Office:** NTDP F230

**E-mail Address:** [cihan.tunc@unt.edu](mailto:cihan.tunc@unt.edu)

**Office Hours:** Wednesdays 2 PM – 4 PM (in office unless otherwise mentioned)

**Teaching Assistant:** Seemaparvez Shaik

**Office:** E wing (E-247) - Cubicle A

**E-mail Address:** [seemaparvez.shaik@unt.edu](mailto:seemaparvez.shaik@unt.edu)

**Office Hours:** Wednesdays (in person) and Thursdays (in person and online) 11:00AM - 12:00 PM

**Canvas:** This course will use the Canvas learning management system (LMS) to distribute course materials, communicate and collaborate online, post grades, and submit assignments. You are responsible for checking the Canvas course site regularly for class work and announcements. **For the communication** (e.g., clarification of a lecture material, assignment, or project, it is recommended to use Canvas discussions first. For other/further concerns or questions, feel free to send us a message from Canvas. **Please do NOT use emails for communication about course related topics**, we may not reply back to the emails (especially from personal emails) but we will reply to Canvas messages for sure. The messages will be generally replied in one day (if not in hours); however, due to unexpected reasons, it may end up a bit longer (if you are not receiving any response in two days, please message us again). And, please be patient!

## **COURSE DESCRIPTION**

Fundamentals of computer forensics and cyber-crime scene analysis including laws, regulations, international standards and formal methodology for conducting computer forensic investigations. Topics include advanced computer forensic science capabilities such as target hardening and software, tools for data duplication, recovery and analysis, and development of pre-search or on-scene computer investigative techniques.

## **PREREQUISITE(S)**

Prerequisite(s): CSCE 2110 with a grade of C or better OR consent of instructor (for CSCE 4555).

*Linux, programming, network, basic OS, and system knowledge highly needed.*

## **REFERENCE TEXT(S)**

- Easttom, C. (2024). *Digital Forensics, Investigation, and Response 4 ed.* Jones and Bartlett Learning, ISBN:9781284226065  
*Please get the book and lab access together as we will be using the labs for this class.*
- University of Foreign Military and Cultural Studies TRADOC G-2 Intelligence Support Activity. (2022). *The red team handbook: The army's guide to making better decisions (ver. 9).* Retrieved (Aug 17, 2025) from <https://home.army.mil/wood/application/files/6115/8222/0759/RedTeamHB.pdf>

## **COURSE OUTCOMES**

Upon successful completion of this course, the student will be able to:

1. Demonstrate general knowledge and comprehension of computer forensics and computer investigations.
2. Describe and explain the Windows, Macintosh, and Unix/Linux operating systems data storage and

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methodologies.

3. Describe and explain the methods used for digital evidence control, processing crime and incident scenes, and data acquisition for computer forensic analysis.
4. Demonstrate knowledge and comprehension of basic tools and techniques used in the field of computer forensics sciences.
5. Describe and explain writing investigation reports and being an expert witness.

We will start by focusing on some of the most basic components, then move into exploring Windows and Linux variants and finally identifying some underlying content. We will not be following a specific certification for this class.

### **GRADING POLICY**

Course grade will be a weighted average according to the following:

Homework Assignments: 20%

Lab Assignments: 30%

Midterm: 25%

Final: 25%

Recitations (Attendance): 5%

**Homework Assignments:** Homework will be assigned based on the lectures and assigned reading. These assignments are meant for you to become familiar with the course material and this practice will aid you in mastering the concepts.

**Lab Assignments:** We will be having some lab assignments to have some hands-on experience in this domain. You may need to create a virtual machine on your laptop for this case. If you do not have the sufficient computational power, please contact me.

**Midterm Exams:** There will be two midterm examinations given in this course.

**Final Exam:** There will be a comprehensive final exam given during the scheduled time according to the University. *All students are expected to take the final exam during the scheduled time period.*

**Recitations:** *Please attend the recitation sessions to receive the given point (Please make sure that you are working on the given assignments and working/acting professionally).*

### **Final Grading**

A = [90%, 100%]

B = [80%, 90%)

C = [70%-80%)

D = [60%-70%)

F = [0%-60%)

### **TENTATIVE SYLLABUS TOPICS (subject to change):**

Introduction to forensics and cyber crime

Collecting, seizing, and protecting evidence

Data recovery

Email forensics

Windows, Linux, and MacOS forensics

Incident and intrusion response

Network forensics

Mobile (smart) phone forensics

Memory forensics

Miscellaneous items

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**SCHEDULE**

Based on <https://registrar.unt.edu/registration/fall-academic-calendar.html>

**Classes Begin:** Aug 18, 2025

**Labor Day:** September 1, 2025 (no class)

**Thanksgiving Break:** November 24-30, 2025 (no class)

**Reading Day:** Dec 5, 2025 (no class)

**Final Exam Week: Dec 6-12, 2025**

According to <https://registrar.unt.edu/exams/final-exam-schedule/fall.html>, the final exam will be held on Saturday **December 8, 2025 between 8:00 a.m. - 10:00 a.m. in the same classroom.**

**COURSE POLICIES**

**Attendance Policy**

Class attendance is regarded as an obligation as well as a privilege. All students are therefore expected to attend each class meeting. A student who misses class is still responsible to find out what was discussed and to learn the material that was covered and obtain the homework that was 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. Excessive student absences may have a negative impact on a student's comprehension and learning. If there are extenuating circumstances, please notify your instructor so that you can work together to ensure your success in learning the material. Please arrive on time to find a seat, prepare your materials, etc.

**Acceptable Student Behavior**

Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The university's expectations for student conduct apply to all instructional forums, including university and electronic classrooms, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at <http://deanofstudents.unt.edu>

**Assignment Policy**

Each assignment will be uploaded to Canvas. The assignment can be theoretical and/or hands-on questions that may require writing some code or installing a software and running it, analyzing some data, etc. You will be uploading your answers through Canvas drop box. Submissions through emails or through comments, or through links will NOT be accepted/reviewed.

**Late Work**

Late submissions will result in losing 1 point per hour for the first two days only; after two days, the late submissions will not be accepted. The late submissions for the projects will never be accepted. *For special circumstances (e.g., health) with the proper documents, contacting the professor in advance is suggested.*

**Examination Policy**

The midterm and final exams will be *closed-book/closed-notes exams*. There will be no cheat-sheet, no books, no computers, etc. Other than emergencies (such as health), there will be no make-up exams, and, in case of a make-up exam, we will be discussing the policy and time individually case by case.

**Feedback**

The feedback (for the assignments, labs, midterm, etc.) will be provided within two weeks approximately. Please note that we have a large class and there can be some delays. The students can request for a review of their answers only within 10 days of grade announcements. Late requests may not be considered.

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**Class Participation**

Class participation is highly suggested. Even though the attendance may not be directly involved in the grading policy, the discussions and examples throughout the semester may be a part of the exams. Correct participation may help you gain some bonus points. Nevertheless, disrespecting behavior in the class (e.g., noise, chatting, spending time on phone/computer) will not be accepted.

**Requirements**

This course has digital components. To fully participate in this class, students need a reliable computer, Internet access (especially to reference content on the Canvas Learning Management System), and suggested software/toolsets, etc. If circumstances change, you will be informed of other technical needs to access course content. Information on how to be successful in a digital learning environment can be found at [Learn Anywhere](https://online.unt.edu/learn) (<https://online.unt.edu/learn>).

**Syllabus Change Policy**

This is a tentative syllabus that might be changed. The instructor reserves the right to modify course policies, course calendar, assignment or project point values, and due dates.

**UNT POLICIES**

**Academic Integrity**

This course follows UNT's policy for *Student Academic Integrity* that can be found at <https://policy.unt.edu/policy/06-003> as well as the *Cheating Policy* for the Department of Computer Science and Engineering. Specifically, the first instance of a student found to have violated the academic integrity (i.e., cheating) policy will result in a grade of "F" for the course and have a report filed into the Academic Integrity Database, which may include additional sanctions.

Students taking this course implicitly agree to uphold the UNT honor code:

*"I commit myself to honor, integrity, and responsibility as a student representing the University of North Texas community. I understand and pledge to uphold academic integrity as set forth by UNT Student Academic Integrity Policy, 06.003 (<https://policy.unt.edu/policy/06-003>). I affirm that the work I submit will always be my own, and the support I provide and receive will always be honorable."*

It is highly important that you are familiar with the University's academic integrity policy and the CSE department's guidelines on academic integrity:

UNT Academic Integrity Policy (PDF): <https://policy.unt.edu/policy/06-003>

CSE Academic Integrity Guidelines: <https://engineering.unt.edu/cse/students/resources/academic-integrity.html>

**Use of AI**

Based on the Student Academic Integrity Policy (UNT Policy 6.003), any form of "unauthorized assistance" constitutes cheating. If the use of AI is not authorized for the assignment in question, the violation is "cheating". Therefore, the use of AI in assignments are NOT welcomed unless it is recommended in the question.

**Safety Procedures and Guidelines**

While working in laboratory sessions, students are required to follow proper safety procedures and guidelines in all activities requiring lifting, climbing, walking on slippery surfaces, using equipment and tools, handling chemical solutions and hot and cold products. Students should be aware that UNT is not liable for injuries incurred while students are participating in class activities. All students are encouraged to secure adequate insurance coverage in the event of accidental injury. Students who do not have insurance

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coverage should consider obtaining Student Health Insurance. Brochures for student insurance are available in the UNT Student Health and Wellness Center. Students who are injured during class activities may seek medical attention at the Student Health and Wellness Center at rates that are reduced compared to other medical facilities. If students have an insurance plan other than Student Health Insurance at UNT, they should be sure that the plan covers treatment at this facility. If students choose not to go to the UNT Student Health and Wellness Center, they may be transported to an emergency room at a local hospital. Students are responsible for expenses incurred there.

This also applies for all the cybersecurity related activities: The students are responsible for their own actions of activities. If a student applies any cyberattacks outside the class instructions for the given assignments, the student is responsible, including incorrect behavior.

### **Course Evaluation**

Student Perceptions of Teaching (SPOT) is the student evaluation system for UNT and allows students the ability to confidentially provide constructive feedback to their instructor and department to improve the quality of student experiences in the course.

### **ODA Statement**

The University of North Texas makes reasonable academic accommodations for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time; however, ODA notices of reasonable accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information see the Office of Disability Accommodation website at <http://www.unt.edu/oda>. You may also contact them by phone at 940.565.4323.

### **Emergency Notification & Procedures**

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Blackboard for contingency plans for covering course materials.

### **Retention of Student Records**

Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Blackboard online system, including grading information and comments, is also stored in a safe electronic environment for one year. Students have the right to view their individual record; however, information about student's records will not be divulged to other individuals without proper written consent. Students are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the University's policy. See UNT Policy 10.10, Records Management and Retention for additional information.

### **Sexual Assault Prevention**

UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of

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sex and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT's Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim's compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off campus. The Survivor Advocates can be reached at [SurvivorAdvocate@unt.edu](mailto:SurvivorAdvocate@unt.edu) or by calling the Dean of Students Office at 940-565- 2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the *Title IX Coordinator* at [oeo@unt.edu](mailto:oeo@unt.edu) or at (940) 565 2759.

## **Technical Requirements & Skills**

### **Minimum Technology Requirements**

- Computer (*a computer that can run multiple virtual machines is suggested; if you don't/can't have a computer with the required computational resources, please contact me and we will be looking for the solutions*)
- Reliable Internet access
- [Canvas Technical Requirements](https://clear.unt.edu/supported-technologies/canvas/requirements) (<https://clear.unt.edu/supported-technologies/canvas/requirements>)
- The University is committed to providing a reliable course system for all users. However, in the event of an unexpected server outage or any unusual technical difficulty which prevents students from completing a time-sensitive assessment activity, the instructor will extend the time windows and provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and contact the UNT Student Help Desk: [helpdesk@unt.edu](mailto:helpdesk@unt.edu) or 940.565.2324 and obtain a ticket number. The instructor and the UNT Student Help Desk will work with the student to resolve any issues at the earliest possible time.

### **Computer Skills & Digital Literacy**

- Using Canvas
- Using email with attachments
- Downloading and installing software
- Using office programs
- Creating, configuring, and using virtual machines
- Programming experience with Python or C/C++ and Bash is recommended
- Basic experience with Linux is recommended
- Networking knowledge, etc.

### **Rules of Engagement**

- Treat your instructor and classmates with respect in email or any other communication.
- Always use your professors' proper title: Dr. or Prof., or if in doubt use Mr. or Ms.
- Unless specifically invited, don't refer to your instructor by first name.
- Use clear and concise language.
- Remember that all college-level communication should have correct spelling and grammar (this includes discussion boards).
- Avoid slang terms such as "wassup?" and texting abbreviations such as "u" instead of "you."
- Use standard fonts such as Ariel, Calibri or Times New Roman and use a size 10, 11 or 12 point font
- Avoid using the caps lock feature AS IT CAN BE INTERPRETED AS YELLING.
- Limit and possibly avoid the use of emoticons.
- Be cautious when using humor or sarcasm as the tone is sometimes lost in an email or discussion post and your message might be taken seriously or sound offensive.
- Be careful with personal information (both yours and others').
- Do not send confidential information via e-mail

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- See these Engagement Guidelines (<https://clear.unt.edu/online-communication-tips>) for more information.

## **Getting Help**

### **Technical Assistance**

**UIT Help Desk:** <http://www.unt.edu/helpdesk/index.htm>

**Email:** [helpdesk@unt.edu](mailto:helpdesk@unt.edu)

**Phone:** 940-565-2324

**In-Person:** Sage Hall, Room 130

**Walk-In Availability:** 8am-9pm

**Telephone Availability:**

Sunday: noon-midnight

Monday-Thursday: 8am-midnight

Friday: 8am-8pm

Saturday: 9am-5pm

**Laptop Checkout:** 8am-7pm

For additional support, visit **Canvas Technical Help** (<https://community.canvaslms.com/docs/DOC-10554-4212710328>)

### **Student Support Services**

UNT provides mental health resources to students to help ensure there are numerous outlets to turn to that wholeheartedly care for and are there for students in need, regardless of the nature of an issue or its severity. Listed below are several resources on campus that can support your academic success and mental well-being:

**Student Health and Wellness Center:** <https://studentaffairs.unt.edu/student-health-and-wellness-center>

**Counseling and Testing Services:** <https://studentaffairs.unt.edu/counseling-and-testing-services>

**UNT Care Team:** <https://studentaffairs.unt.edu/care>

**UNT Psychiatric Services:** <https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry>

**Individual Counseling:** <https://studentaffairs.unt.edu/counseling-and-testing-services/services/individual-counseling>

Other student support services offered by UNT include Registrar (<https://registrar.unt.edu/registration>)

**Financial Aid:** <https://financialaid.unt.edu/>

**Student Legal Services:** <https://studentaffairs.unt.edu/student-legal-services>

**Career Center:** <https://studentaffairs.unt.edu/career-center>

**Multicultural Center:** <https://edo.unt.edu/multicultural-center>

**Counseling and Testing Services:** <https://studentaffairs.unt.edu/counseling-and-testing-services>

**Pride Alliance:** <https://edo.unt.edu/pridealliance>

**UNT Food Pantry:** <https://deanofstudents.unt.edu/resources/food-pantry>

### **Academic Support Services**

**Academic Resource Center:** <https://clear.unt.edu/canvas/student-resources>

**Academic Success Center:** <https://success.unt.edu/asc>

**UNT Libraries:** <https://library.unt.edu/>

**Writing Lab:** <http://writingcenter.unt.edu/>