CHEM 3330: FORENSIC SCIENCE ANALYSIS (FALL 2022)

Instructor Contact

Name: Dr. Charlie Williams
Pronouns: she/her/hers
Office Location: CHEM 263
Phone Number: n/a
Office Hours: MWF 9:00 am – 10:00 am or by appointment (see below)
Email: Charlie.williams@unt.edu

Communication Expectations:

I can be reached most easily via email or the internal Canvas messaging system. If you are attaching pictures to a Canvas message, however, please clearly indicate you are doing so in your message. I will typically respond within 24 hours unless you email me between 4 pm Friday and 5 pm Sunday.

My office hours will typically be held in CHEM 263. If you are unavailable at these times, please reach out to me with a few windows of availability and we can certainly arrange a meeting. It is preferred you try to do this at least 24 hours in advance. We can meet in-person (MWF) or via Zoom (M-F).

Course Description

Overview of the field of criminalistics, with a focus on the recognition, collection, preservation and analysis of physical evidence. Introduction to topics such as fingerprint examination, trace evidence analysis and firearm examination. Prerequisite for more advanced criminalistics courses.

Course Structure

Lecture: Start Date: August 29

Room: CHEM 352

Section 001: MWF 8:00 – 8:50

TOPICS:

Introduction to the Course, Survey of Forensic Science – Forensic Science Disciplines

Ch.1/Ch. 2: Introduction to Crime Scene Investigation – Documentation: Notes, Photographs, Sketches

Ch. 3: Evidence: Types of evidence, collection and preservation

Ch. 19: Fingerprints: Types of fingerprints, processing evidence for fingerprints

Ch. 10: Serology & Bloodstain Pattern Analysis

Ch. 21/22: Impression Evidence/Tool Marks

Ch. 4: Microscopy

Ch. 12: Hair Examination

Ch. 15: Textile Fibers

Ch. 16: Paint

Ch. 17: Soil and Glass

Topics as needed

Lab: Start Date: September 1

Room: CHEM 280

Group 1: W 12:00 – 2:50

Group 2: F 12:00 – 2:50

See Canvas during the first week of class to confirm which group (section) you are in if you are unsure.

LAB EXERCISES (SOME MAY TAKE MORE THAN 1 WEEK):

Documentation Lab – taking crime scene notes, taking crime scene photographs and preparing sketches

Evidence Lab – identification of different types of evidence, proper collection, proper preservation and packaging of evidence.

Fingerprint Lab – processing of evidence using physical methods including various powders, cyanoacrylate, dye stains and chemical methods including RTX, DFO and ninhydrin.

Serology & Bloodstain Lab – identification of blood, urine and blood analysis, bloodstain pattern analysis.

Impression Lab – identifying, documenting and the collection of various types of impression evidence including shoe prints, tire tracks and tool marks.

Hair and Fiber Lab – preparation and examination of hairs and fibers for macroscopic features, microscopic features, and comparison

Course Prerequisites or Other Restrictions

Prerequisite(s): CJUS 2100 or equivalent, or consent of instructor, and admittance into Forensic Science Program.

Course Objectives

By the end of this course, students will be able to:

1. Discuss different disciplines within the field of forensic science (a survey of forensic science) and the history of forensic science.
2. Perform (basic aspects of) crime scene investigations including documentation, evidence identification, collection, processing and preservation.
3. Identify types of fingerprint patterns and develop different types of evidentiary prints.
4. Discuss different types of body fluid analysis used in forensic science including blood identification and bloodstain pattern analysis.
5. Identify (basic) types of impression evidence and identify and collect different types of impression evidence.
6. Use basic microscopy to examine select types of trace evidence

Materials

Houck, Max M., Siegel, Jay A. (2015) Fundamentals of Forensic Science (3rd edition) Academic Press ISBN: 978-0128000373

1 bound lab notebook (not spiral-bound) and blue or black ink pen

Lab safety glasses or goggles

Scientific calculator (basic trig functions)

Teaching Philosophy

In order to benefit most from this course, students should attend each lecture, though attendance is not typically graded (there are occasional participation points or bonus credits to be earned). I try to build in time for you all to discuss concepts and ideas amongst yourselves. I have found that the networking that takes place often benefits students beyond this class – you all have the benefit of a small class with peers interested in the same topics you are interested in. I encourage you not to take it for granted and put effort into group assignments.

I am a facilitator of learning, but I cannot learn for you. I place great value on students seeking out their own answers. As such, I have a pretty relaxed cell phone policy as long as the freedom is not abused. I encourage students to look up information when they have a question (if possible) and seek me or a TA out for clarification or reinforcement. I believe learning is much more effective and long-term when it takes place in this manner.

I do not believe in busy work or assigning homework simply to have something to grade. If I ask you to complete a task, it's because I think it will help you learn material and help you progress on your journey to becoming a professional in the forensic field.

Course Technology & Skills

Minimum Technology Requirements – In Person

- Access to device with the following:
    - Microsoft Office Suite
    - [Canvas Technical Requirements](https://clear.unt.edu/supported-technologies/canvas/requirements) (https://clear.unt.edu/supported-technologies/canvas/requirements
    - Reliable internet access
    - Speakers
    - iClicker app

Minimum Technology Requirements – Remote

If class switches to remote format, you'll also need the following in addition to the in person materials:

- Microphone
- Zoom
- Webcam

Computer Skills & Digital Literacy

Provide a list of course-specific technical skills learners must have to succeed in the course, such as:

- Using Canvas
- Using email with attachments
- Using Microsoft Office (primarily Word and Powerpoint)
- Using iClicker

Technical Assistance

Here at UNT we have a Student Help Desk that you can contact for help with Canvas or other technology issues.

UIT Help Desk: [UIT Student Help Desk site](http://www.unt.edu/helpdesk/index.htm) (http://www.unt.edu/helpdesk/index.htm)
Email: 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) (https://community.canvaslms.com/docs/DOC-10554-4212710328)

Course Requirements

This is a combined lecture/lab course, but the requirements for each environment are separated below for simplicity.

Lecture

Attendance to lecture is expected and students are responsible for all material presented in lecture whether present or not.

Each chapter covered will have the end of chapter questions assigned from the textbook.

There will be several brief essay assignments throughout the semester. For essay assignments, I do not ask for a minimum or maximum number of pages, simply that you write enough to convey all of the relevant details of the assignment.

There will be two midterm exams and a cumulative final exam. Low stakes pop quizzes may occur to assess retention or to serve as a way to take attendance for extra credit.

Lab

Each lab entry will be kept in a notebook with blue or black ink. Your TA will cover specific requirements during your first lab for how labs are graded and a summary will be provided on Canvas. Lab attendance is mandatory and no make-up labs will be possible without a university-approved excuse. If you are more than 15 minutes late, you may not be allowed to participate in lab that day.

You may not switch labs without prior authorization from instructor or TA.

Proper attire must be worn during lab – no exposed skin below the waist, full shoes, long hair preferably tied back. Some labs can be quite messy, so keep that in mind as you dress for lab as well.

The lab notebook will be turned in before Thanksgiving for grading.

Grading

This course will be graded using the weighted categories:

Homework – 30%

Lab Notebook – 25%

Midterm Exams – 20%

Final Exam – 20%

Attendance – 5%

Letter grades will be assigned as follows:

A = 90.0% and above

B = 80.0% - 89.9%

C = 70.0% - 79.9%

D = 60.0% - 69.9%

F = 59.9% and below

Because of my generous late policy and the ample opportunities to earn points outside of exams, I am not known for last minute grade-rounding. If you feel that there have been any errors in assignment grading, you are responsible for contacting myself or the TA <u>within 1 week of receiving that grade</u>.

Course Policies

Attendance Policy

Attendance is expected and is an integral part of success in this course and the forensic science program in general. The knowledge gained in this class will be used in several future classes, including CHEM 4360 next semester, so I strongly suggest committing to really learning the material now.

Class Participation

Class participation is often a key piece of this course. Bonus points may be awarded at the instructor's discretion for all attendees who participate in certain activities.

Late Work

Late work will be accepted until the date and time of the exam on which that topic is tested with increasing point penalties - 10% the first day, 20% the second day, up to a maximum of 50%.

Examination Policy

There will be two midterms and a final exam. Dates will be announced at least one week in advance.

Make-up exams will not be administered without a university-approved excuse.

Assignment Policy

Assignment due dates will be announced in class at least 2 periods before they are due. Assignment instructions and due dates will be included in the assignment on Canvas.

All assignments should be submitted in Canvas as .DOC, .DOCX, or .PDF (preferred).

All work should be your own unless SPECIFICALLY stated that you may collaborate.

For written assignments/short essays: All sources should be reputable and must be cited appropriately, and the assignment should be written in your own words. Turnitin will be used for submission. If your similarity score is above 50%, you may receive a zero for that assignment, so be sure to write everything in your own words.

Instructor Responsibilities and Feedback

- It is my responsibility to help students grow and learn, provide clear instructions for projects and assessments, answer questions about assignments, identify additional resources as necessary, review and update course content, etc.
- I will typically reply to emails within 24 hours except on weekends as discussed in the Contact section
- Grades will typically be posted within 1 week unless an announcement is made otherwise

Syllabus Change Policy

This syllabus may be changed at any time. Changes will be announced via Canvas in as timely a fashion as possible.

Due dates will be announced in class and will be visible on the assignments themselves on Canvas and are also subject to change.

Rules of Engagement

Rules of engagement refer to the way students are expected to interact with each other and with their instructors. Here are some general guidelines:

- While the freedom to express yourself is a fundamental human right, any communication that utilizes cruel and derogatory language on the basis of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law will not be tolerated.
- Treat your instructor and classmates with respect in any communication online or face-to-face, even when their opinion differs from your own.
- Ask for and use the correct name and pronouns for your instructor and classmates.
- Speak from personal experiences. Use "I" statements to share thoughts and feelings. Try not to speak on behalf of groups or other individual's experiences.
- Use your critical thinking skills to challenge other people's ideas, instead of attacking individuals.
- Avoid using all caps while communicating digitally. This may be interpreted as "YELLING!"
- Be cautious when using humor or sarcasm in emails or discussion posts as tone can be difficult to interpret digitally.
- Avoid using "text-talk" unless explicitly permitted by your instructor.
- Proofread and fact-check your sources.
- Keep in mind that online posts can be permanent, so think first before you type.

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

UNT Policies

Academic Integrity Policy

Academic Integrity Standards and Consequences. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.

As students in the forensic science program, ethical behavior is paramount. Therefore, I adopt a zero - tolerance policy with respect to any violations of academic integrity. Any students found to be cheating may immediately receive a failing grade.

ADA Policy

UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodations at any time, however, ODA notices of 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 accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website (https://disability.unt.edu/).

Prohibition of Discrimination, Harassment, and Retaliation (Policy 16.004)

The University of North Texas (UNT) prohibits discrimination and harassment because of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law in its application and admission processes; educational programs and activities; employment policies, procedures, and processes; and university facilities. The University takes active measures to prevent such conduct and investigates and takes remedial action when appropriate.

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 Canvas 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 Canvas 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.

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 classroom, labs, discussion groups, field trips, etc. Visit UNT's Code of Student Conduct (https://deanofstudents.unt.edu/conduct) to learn more.

Student Evaluation Administration Dates

Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The survey will be made available during weeks 13, 14 and 15 [insert administration dates] of the long semesters to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via IASystem Notification" (no-reply@iasystem.org) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey they will receive a confirmation email that the survey has been submitted. For additional information, please visit the SPOT website (http://spot.unt.edu/) or email spot@unt.edu.

Academic Support & Student Services

Student Support Services

Mental Health

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)

Chosen Names

A chosen name is a name that a person goes by that may or may not match their legal name. If you have a chosen name that is different from your legal name and would like that to be used in class, please let the instructor know. Below is a list of resources for updating your chosen name at UNT.

- UNT Records
- UNT ID Card
- UNT Email Address
- Legal Name

UNT euIDs cannot be changed at this time. The collaborating offices are working on a process to make this option accessible to UNT community members.

Pronouns

Pronouns (she/her, they/them, he/him, etc.) are a public way for people to address you, much like your name, and can be shared with a name when making an introduction, both virtually and in-person. Just as we ask and don't assume someone's name, we should also ask and not assume someone's pronouns.

You can add your pronouns to your Canvas account so that they follow your name when posting to discussion boards, submitting assignments, etc.

Below is a list of additional resources regarding pronouns and their usage:

- What are pronouns and why are they important?
- How do I use pronouns?
- How do I share my pronouns?
- How do I ask for another person's pronouns?
- How do I correct myself or others when the wrong pronoun is used?

Additional Student Support Services
- 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/)
- Chemistry Resource Center (https://chemistry.unt.edu/undergraduate-program/instructional-resources)
- Math Lab (https://math.unt.edu/mathlab)