Chemistry 5390
Fall 2026

Lecture: TTH 8:00 – 9:20 a.m. CHEM 352
For latest info and announcements go to the **Class Website** at:
https://sites.cos.unt.edu/~tgolden/courses/course_downloadsFall26

Instructor: Dr. Teresa D. Golden

Office hours: 10:00-10:30 a.m. TTh, CHEM 279/207B, tgolden@unt.edu

Grading: Exams, quizzes, and homework will each be assigned a total point value. The student's final grade will be: (the total number of points received/total number of points possible) x 100.

A – 90% B – 80% C – 70% D – 60% F < 60%

Exams: There will be 2-3 exams, several quizzes, homework, and a final exam. Dates for each exam will be announced in class.
The final will be Tuesday, December 8th, 8:00 - 10:00 a.m.

Textbook: Principles and Practice of Modern Chromatographic Methods. Roberts & others on reserve in Willis Library (code: CHEM5390).

Research Paper: See attached sheet for more information.

Additional Information:

(a) According to University policy, the grade of I (incomplete) cannot be given as a substitute for a failing grade in a course.

(b) 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.

(c) 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 the UNT Learning Management System (LMS) for contingency plans for covering course materials.

(d) ADA Accommodation Statement 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 at disability.unt.edu.

Course Topics: ***

Week 1 & 2	Chromatography Theory; Gas Chromatography (Mobile Phase)
Week 3 & 4	Gas Chromatography (Injection Modes, Columns and Detectors)
Week 5	Gas Chromatography (Detectors and Applications)
Week 6	High Performance Liquid Chromatography (Theory)
Week 7	High Performance Liquid Chromatography (Instrumentation)
Week 8	High Performance Liquid Chromatography (Detectors)
Week 9 &10	High Performance Liquid Chromatography (LC/MS)
Week 11	High Performance Liquid Chromatography (Applications)
Week 12	Super Critical Fluid Chromatography (Introduction, Instrumentation, Theory and Applications)
Week 13	Super Critical Fluid Chromatography (Introduction, Instrumentation, Theory and Applications)
Week 14 & 16	Other various topics as time permits; i.e. Gel Permeation Chromatography, Ion Chromatpgraphy, and Capillary Electrophoresis

***This is a basic course outline and may change depending on other factors.

Research Paper

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A research paper may be done as extra credit for the course. The topic must cover the latest advances in chromatography or can be related to the student's research as long as there is a chromatography component. A white paper (2-4 pages) indicating the student's topic of choice, abstract, and brief introduction (with reference list) must be submitted to me no later than October 22nd. The final research paper is due on December 1st.

Papers should include:

Title Page (Title, Name, Type of Paper, Date)
Introduction (literature review, background, and frame of reference)
Instrumentation and Experimental (including figures)
Problem Statement/Assessment of Need
Results and Discussion (including figures)
How this advancement solves this problem/need
Conclusions
References/Citations

(Note – if your topic is part of your graduate research – (submitted paper for publication, 6010 topic paper, or masters/dissertation chapter) – the course research paper can be in the format required for that type of content.

The grade will be based on the research idea and scope of literature review. ANY plagiarism will be grounds for a failing grade. Use your own words.

The following are good starting places to find presentation ideas:
American Chemical Society Journals, search Analytical Chemistry and Journals of Chromatography on the library search sites.
Instrument company websites: i.e. Agilent, Thermo Scientific, Shimadzu, etc.