

CHEM 1430: General Chemistry I Laboratory

Course Overview

Course Description

This course is designed to accompany the CHEM 1410, 1412, or 1413 General Chemistry I lecture course. Many of the topics covered in this course will have direct correlation with the topics covered in your General Chemistry I lecture course. However, there may be times when the laboratory course is "ahead" of the lecture course. It is your responsibility to read all material presented on Canvas so that you can complete the assignments and experiments successfully.

Communication

Instructor: Dr. Timothy Stephens

Office Hours: Tuesdays and Thursdays 10:00 am - 11:30 am via Zoom. Meeting links will be posted on Canvas. You will be placed into a Waiting Room when you log in and I will meet with you individually in the order in which students logged in.

Email: Timothy.Stephens@unt.edu

While I want to make myself as available as possible to each of you, I do have to place some limitations on when I can be contacted. I would prefer that most general questions go through the Q & A forum in the Discussion Board area. If you have a general question about the course or assignments, please post it there. Either your TA, one of your classmates, or I will answer it there. This way we can all benefit from questions asked, and they can be answered in a venue that the whole class can see. You may also want to find someone in class to be a "buddy" with. This will give you at least one other person who you can email with questions.

If you have a private question, please contact me via email only and I will respond within 24 hours on weekdays (usually sooner). Please do not expect a response over the weekend. **DO NOT use Canvas Inbox to contact me.** I do not receive those notifications regularly and your message will get lost. Email me directly for a quick response.

When emailing your Instructor or TA, you **MUST** include your Full Name, Course Number, and Section Number in order to receive a response. There are a lot of sections all with over 20 students each. If you do not give me that information, I do not have the time to find you in all of those sections, so I will not look.

My primary means of communication with the entire class will be through the Announcements feature of Canvas. Your TA will also be utilizing this feature for mass communications throughout the semester.

Prerequisites

Either concurrent or previous enrollment in CHEM 1410 (or equivalent course if transferring from another institution) is required.

CHEM 1430 is a separate course from CHEM 1410. If you drop one course, you are not automatically dropped from the other.

Required Texts, Technology, and Other Materials

- There is no required textbook for the course. All instructional material will be presented on Canvas.
- You are required to provide your own chemical safety glasses or chemical safety goggles. Information about where to purchase these from the Department of Chemistry will be posted on Canvas.
- You are required to purchase access to Packback. This access is \$15 for the semester. Information about purchasing this access will be provided on Canvas.
- You are required to download and install Microsoft Office so that you can complete the assignments for all In-Person experiments. Microsoft Office is provided by UNT. You can download and access Microsoft Office by signing in with your UNT email and password.
- You are required to have a stable internet connection in order to complete the simulations and to upload all assignments.
- If you do not have access to a stable internet connection at home, or you are unsure if your connection is stable, you are always welcome to utilize the computers available on the UNT Denton campus to complete your assignments.

Course Structure

All instructional material for this course is provided on Canvas. Each week, you will be expected to come in and perform an experiment. The day, location, and time you are scheduled to come in is based on the section you registered for. Please refer to your class schedule to know when you are expected come in to complete your experiment.

Before each experiment, you will be expected to complete a short Prelab quiz. This quiz will test your understanding of the background material for the experiment. This background material is provided in the Introduction for each experiment. After you complete each experiment, you will be expected to complete at least one Postlab question. These questions are designed to force you to evaluate your performance during the experiment. I want you to think about things that could have been done differently to get better results. I also want you to acknowledge things that went well during the experiment so that you can replicate them in the future and encourage good laboratory practices.

Course Objectives

Upon successful completion of this course, learners will be able to (*numbered in order of presentation*):

1. Demonstrate the ability to measure the volume of a liquid using various chemical glassware.
2. Analyze data using statistical methods in Excel.
3. Identify an unknown material from chemical and physical property data.
4. Demonstrate the ability to follow a chemical procedure.
5. Analyze data and observation in order to apply critical thinking skills to explain discrepancies in your data.
6. Compare the empirical formulas of simple compounds to known formulas and evaluate sources of error in an experimental design.
7. Demonstrate an ability to read the volume of a buret and determine the concentration of a liquid solution.
8. Evaluate trends in data to verify known physical laws.
9. Compare the molar mass of a gas based on experimental results.

Course Activities & Assignments (1,600 points total)

Experiments (1200 points)

There will be 12 experiments that need to be completed in person in your assigned laboratory room on your assigned week. Grading for each experiment will consist of four sections for a total of 100 points per experiment.

- Prelab Quiz (to be completed after reading the Introduction and watching all videos on Canvas): 15 points each
- Data Submission: 50 points each
- Postlab Questions (will unlock on Canvas after you have submitted your Data): 25 points each
- Safety and Cleanup in the laboratory (to be assessed by your TA when you are performing the experiment): 10 points each

Diversity and Inclusion Teamwork Project (200 points)

This semester, you will be tasked with doing a group research project on a chemist who is not white, not male, and/or identifies as LGBTQ+. The purpose of this project is to foster a sense of teamwork among your fellow students as well as introduce you to chemists that do not get the recognition they deserve. More details about this project are provided on Canvas. Grading for this project is based on several smaller assignments throughout the semester as well as one final essay on your selected chemist. The grade breakdown is as follows:

- Chemist Selection (10 points): This is where you will choose the chemist you wish to research. If your chemist is approved, you will receive full points. You are always welcome to verify if your chemist meets the criteria for this project by asking your TA or your Instructor.
- Starting Point Questionnaire (40 points): This assignment will be graded based on completion only. All boxes for the worksheet must be completed in order to receive full points.
- First Draft (50 points): This will be graded using the exact same rubric as the Final Draft essay. If you do not write a full essay for your first draft, you will receive zero points for this assignment.

The purpose of this assignment is to allow your TA and Instructor to provide feedback so that your final draft can be scored as highly as possible.

- Final Draft (100 points)

Packback Participation (200 points)

Participation is a requirement for this course, and the Packback Questions platform will be used for online discussion about class topics. Packback Questions is an online community where you can be fearlessly curious and ask open-ended questions to build on top of what we are covering in class and relate topics to real-world applications. Information about registering for Packback as well as where to go for help with the platform are provided on Canvas. There will be 12 Packback assignments this semester, each due before Friday at 11:59 pm. I will take the 10 highest grades for the semester from this group.

Grading

Grading is based on the total points earned throughout the semester rounded to the nearest whole number.

- A: 1432 – 1600 points
- B: 1272 – 1431 points
- C: 1112 – 1271 points
- D: 952 – 1111 points
- F: 0 – 951 points

The percentages listed on Canvas will always be an incorrect representation of your grade in the course. The reason for this is because Canvas does not count missed assignments when calculating your percentage in the course. So if you miss a lot of assignments, but do well on one or two, Canvas will list the assignments you completed and will show a high percentage in the course. This is incorrect because I look at the total number of points that you earned. Meaning that if you miss an assignment, those zero points are still calculated in your total points earned. In order to see an accurate representation of your grade in the course, you will need to add up all of the points you have earned on Canvas and divide by the total points available for all of the assignments up to that point in the semester.

Grading Turnaround

All prelab quizzes will be graded immediately and uploaded to Canvas. Data submissions and postlab questions will be graded within 7-10 business days of your submission. If you do not have a grade after 10 business days from the due date, please email Timothy.Stephens@unt.edu as soon as possible so that he can figure out what is going on.

Course Policies

Late Work

I will not accept late work in this course. Canvas will lock submissions for an assignment once the due date has passed. Extensions will only be granted if a student has a [university-excused absence](#) and provides documentation within a reasonable time after the due date has passed.

Face Coverings

UNT encourages everyone to wear a face covering when indoors, regardless of vaccination status, to protect yourself and others from COVID infection, as recommended by current CDC guidelines. Face covering guidelines could change based on community health conditions.

Attendance

Attendance is required in order to perform the experiments and collect data. If you have a university-excused absence with proper documentation, you are expected to contact the Instructor within 10 days of your missed class time to discuss options for earning missed points. Failure to provide documentation within those 10 days or for absences that are not university-excused will result in the missed day's work receiving a grade of 0 points.

Students are expected to attend class meetings regularly and to abide by the attendance policy established for the course. It is important that you communicate with the professor and the instructional team prior to being absent, so you, the professor, and the instructional team can discuss and mitigate the impact of the absence on your attainment of course learning goals. Please inform the professor and instructional team if you are unable to attend class meetings because you are ill, in mindfulness of the health and safety of everyone in our community.

If you are experiencing any [symptoms of COVID-19](https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html) (<https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>) please seek medical attention from the Student Health and Wellness Center (940-565-2333 or askSHWC@unt.edu) or your health care provider PRIOR to coming to campus. UNT also requires you to contact the UNT COVID Team at COVID@unt.edu for guidance on actions to take due to symptoms, pending or positive test results, or potential exposure.

Grade Disputes

You are required to wait 24 hours before contacting me to dispute a grade. Within that time, I expect that you will review the assignment details and reflect on the quality of the work you turned in. If you would still like to meet, email me to set up a meeting (I cannot discuss grades over email). You should come to our scheduled meeting with specific examples that demonstrate that you earned a higher grade than you received. If you miss your scheduled meeting, you forfeit your right to a grade dispute. If you do not contact me to schedule a meeting within seven days of receiving your grade, you also forfeit your right to a grade dispute.

Extra Credit

There will be one guaranteed opportunity for extra credit in this course. At the end of the semester an assignment will open where you can submit a screenshot of your SPOT evaluation submission

confirmation. SPOT evaluations are the primary way that we determine TA job duties and evaluate student's needs in this course. Please be critical, but respectful in your evaluation of your TA and the course. I take these evaluations seriously and many suggestions for improvement by former students have been implemented in subsequent semesters.

There may be other opportunities for extra credit throughout the semester. These will be assigned when they become available. Some extra credit opportunities may come in the form of additional awarded points on Postlab Question assignments. These are generally awarded so that grading of those assignments is easier.

Course Safety Statement (for Laboratory Courses)

Students in the laboratory are urged to use proper safety procedures and guidelines. While working in laboratory sessions, students are expected and required to identify and use proper safety 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 the University of North Texas 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 coverage should consider obtaining Student Health Insurance for this insurance program. Brochures for this insurance are available in the UNT Student Health and Wellness Center on campus. 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 you have an insurance plan other than Student Health Insurance at UNT, please be sure that your plan covers treatment at this facility. If you choose not to go to the UNT Student Health and Wellness Center, you may be transported to an emergency room at a local hospital. You are responsible for expenses incurred there.

Academic Dishonesty

Students caught cheating or plagiarizing will receive a 0 for that particular assignment or quiz. Additionally, the incident will be reported to the Office of Academic Integrity, who may impose further penalty. According to the UNT catalog, the term "cheating" includes, but is not limited to: a. use of any unauthorized assistance in taking quizzes, tests, or examinations; b. dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; c. the acquisition, without permission, of tests or other academic material belonging to a faculty or staff member of the university; d. dual submission of a paper or project, or resubmission of a paper or project to a different class without express permission from the instructor(s); or e. any other act designed to give a student an unfair advantage. The term "plagiarism" includes, but is not limited to: a. the knowing or negligent use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgment; and b. the knowing or negligent unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials. This also includes copying other students' data in lab, unless given express written permission to do so by the Instructor, turning in a data sheet for an experiment that you were not physically present for, or copying other students' words or work.

ADA Accommodation

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Access (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, refer to the Office of Disability Access website at <http://www.unt.edu/oda> (Links to an external site.). You may also contact ODA by phone at (940) 565-4323.

Emergency Notification and Procedures

In the event that the university closes due to an emergency, I will post an Announcement on Canvas as soon as possible with instructions for you to complete the missed experiment(s). Each emergency is going to be different, so I will take into account what is happening while posting these Announcements. Since the situation may change at a moments notice, please refer to the most recent Announcement during these emergencies in case I do not have the ability to delete older Announcements in time. In the event that I am unable to access Canvas, I promise to post an Announcement with instructions as soon as I am able.

Schedule

Week	Experiment
1	No Class Meetings
2	Lab Safety Demonstration and TA Introduction
3	Introduction to Data Analysis

4	Chemical and Physical Properties Diversity and Inclusion Project Chemist Selection Due
5	Synthesis of Indigo
6	Densities of Solids Diversity and Inclusion Project Questions Due
7	Empirical Formulas
8	Mass of Calcium Carbonate in Antacid Tablets
9	Molecular Geometry Calculations Diversity and Inclusion Project First Draft Due
10	Identify Unknown from Solubility Rules
11	Concentration of Acetic Acid in Vinegar
12	Gas Laws
13	Molar Mass of a Volatile Liquid Diversity and Inclusion Project Final Draft Due
14	No Class Meetings (Fall Holiday)
15	No Class Meetings (Pre-Finals Week)