

CHEM 1310 Laboratory Syllabus

General Chemistry Laboratory, All section

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Instructor Information

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General Course Information

Description

General Chemistry Laboratory is an introductory chemistry laboratory that focuses on foundational physical and analytical chemistry. While you will develop some technical skills with handling and measuring chemicals, much of the work is aimed at developing transferable data analysis, modeling, and scientific explanation and argumentation skills. Technical writing and presentation will be significant parts of this course. Lecture-related content topics addressed in experiments will include fundamentals of measurement, quantum theory of the atom, stoichiometry, Lewis structures, intermolecular interactions, chemical thermodynamics, kinetics, and equilibrium. Developing comfort and accuracy when handling chemicals are important psychomotor goals of the course. Investing in CHEM 1310 laboratory will help you walk into advanced chemistry lab courses and research laboratories with confidence!

Course Learning Outcomes

This is a **residential** course that meet twice per week for in-person experiments. Each lab day, you will complete an experiment with a lab partner and conduct results analysis with multiple other students. It is an expectation that you will attend all experiments, and sufficient attendance is required to pass the course. Attendance is also necessary to complete post-lab assignments.

Required Course Materials

- Lab coat, 100% cotton.
- Safety glasses. You are welcome to use either safety glasses or goggles for all experiments.

- Composition notebook. For recording data and observations in the laboratory. This notebook does not need to make copies as you write.
- All assignments, protocols, and other documents will be distributed through the CHEM 1310 Laboratory Canvas site. Turning on Canvas notifications is strongly recommended, so that you receive a weekly announcement describing what laboratory will look like in the week ahead. Experimental protocols and any CRO forms needed should be printed from Canvas and brought to the lab.

Grading Policy:

Assignments

1. *Lab Safety 101*. Safety is absolutely essential in chemical laboratory work. Lab Safety 101 is the basic lab safety training offered by Georgia Tech Environmental Health and Safety. It will introduce you to essential policies and procedures related to safety that apply to research and teaching laboratories across the Institute.
2. *Introduction to Laboratory*. This assignment will introduce you to course logistics, Microsoft Excel, basic measurement theory, laboratory reports, and fundamental chemistry concepts.
3. *Pre-lab Assignments*. Knowing what you're doing in the lab and why you're doing it helps you be safe and efficient. Before lab, read the protocol and complete the pre-lab assignment built into Canvas. A completed pre-lab is required to receive credit post-lab assignments. This requirement will be enforced using Canvas.
4. *Attendance*. Attendance for the lab is mandatory, you must attend to receive credit post-lab assignments. This requirement will be enforced using Canvas.
5. *Post-lab Assignments*. Instructions for post-lab assignments for each experiment will be provided on Canvas and assignments will be submitted through Canvas. Post-lab assignments will focus on the development of robust technical writing, scientific argumentation, and data visualization skills.

Description of Graded Components

Laboratory represents 20% of your overall course grade (200 points of 1000). ***You must achieve a 60% in lab (120 points) to pass the course as a whole.***

Each post lab will be grade out of 15 points. You must obtain at least a 12/15 point for individual post lab to earn a Satisfied grade (S). Anything below 12 will receive an Unsatisfied grade (U).

We will have overall of 10 post labs. The scale will be follow.

9 post labs with an S grade is equivalent of 200 points.

8 post labs with an S grade is equivalent of 180 points.

7 post labs with an S grade is equivalent of 150 points.

6 post labs with an S grade is equivalent of 120 points.

You must attempt all the labs (even if you don't need the last lab to earn full 200 points on the lab ends. Since attendance is mandatory, if you have an unexcused absence for the lab, you will receive a grade deduction.

Course Policies

Attendance and/or Participation

Labs meet in a room on the fifth floor of Clough Commons and **lab attendance is mandatory**. Please consult your class schedule for the time and location of your lab section. To earn credit for assignments related to an experiment, it is necessary to attend and collect your own data; using another students' data without attending lab is prohibited. Since attendance is mandatory, if you have an unexcused absence for the lab, you will receive a grade deduction.

Consult with Dr. Le prior to a planned absence from lab and set up a meeting with the Office of Student Life if applicable (see below). Excused absences include:

- Participation in athletics sanctioned by Georgia Tech.
- Cases in which the Office of Student Life issues an excused absence. These are issued for emergencies such as injury, illness, or death in the family. After your appointment with their office, they will contact your instructors to arrange accommodations. Please note that any absence due to illness must be accompanied by an email from the Dean of Students indicating that you have met with them and that they suggest excusing your absence.
- Religious observances.
- Absences sanctioned by the Student Academic and Financial Affairs Committee (SAFAC). Contact the committee at least three weeks prior to a planned absence.

Excused absences will be removed from calculation of your lab grade so that they do not count against you.

Tardiness Policy. Students who arrive more than 15 minutes after the scheduled start of the lab period (in person) will be turned away and will not be allowed to perform the experiment in a different section. If you anticipate a recurring situation that will cause you to be late to your lab period, please inform your teaching assistant at the start of the semester. Please note that pre-lab assignments are due at the start of your lab period, will be unavailable after this time, and must be completed to submit remaining assignments in each experiment module.

Accommodations through the Office of Disability Services. If you have accommodations through ODS, please meet with Dr. Le in the first week of the semester to discuss how your accommodations intersect with the course.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review [Georgia Tech's Honor Code](#) and the student [Code of Conduct](#).

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Core IMPACTS

[Core IMPACTS](#) is the University System of Georgia's General Education curriculum. If you are teaching a course that counts towards Core IMPACTS, you should include a syllabus statement about the Core area and associated [career competencies](#). [This resource](#) developed by the Center for Excellence in Teaching and Learning and Online Education at Georgia State University includes template syllabus statements for each of the Core IMPACTS areas that you may adapt for your course.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, [contact the Office of Disability Services](#) (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. [The Student-Faculty Expectations](#) articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Collaboration, Group Work, and Use of Generative AI

Although you will work with a lab partner to complete experiments, all work for the laboratory must be prepared wholly by you. This means you must create your own data tables, plots, sample calculations, and text. The content of your pre-labs and post-lab assignments must be based solely on what appears in your lab notebook. Copying and pasting figures, tables, or text constitutes plagiarism and is a violation of the Georgia Tech Honor Code.

You are welcome to work with other students while completing assignments for lab, and your peers can be excellent resources for learning. However, to properly assess your learning and provide you with feedback that allows you to enrich yourself, work that you call yours must be produced wholly by you. You may not copy the work of another student or resource and represent it as your own. ***Additionally, sending/showing any part of any work that you intend to turn into another student is strictly prohibited.*** This includes drafts, non-final revisions, and submitted copies. This applies to both paper and electronic copies. Giving other students access to your laboratory report and access other student reports are violations of the Honor Code of Georgia Tech and serious breaches of academic integrity.

TAs are bound by the Honor Code to notify the First-year Chemistry faculty of suspected plagiarism of laboratory work. If you are concerned about potential plagiarism associated with your work, please consult your teaching assistant before turning it in.

Plagiarism is defined, according to the Merriam-webster dictionary, as “the act of using another person’s words or ideas without giving credit to that person”. This is a violation of the Georgia Tech Academic Honor Code and will be reported and dealt with in accordance with institute policy.

Any element (including figures and text) that is taken from a source and is not entirely your own creation must be cited appropriately. Copying and pasting a figure from someone else’s work, including the internet, without a proper citation, is considered plagiarism. Many guides are available to help with proper citation. As an example, please see the Chicago Manual of Style. http://www.chicagomanualofstyle.org/tools_citationguide.html

AI-based assistance:

You are permitted to use AI-based assistance, such as Chat GPT and Copilot, the same way you collaborate other people meaning you are welcome to talk about your ideas and work with other people, both inside and outside the class, as well as with AI-based assistants. However, all work you submit must be your own. You should never include in your assignment anything that was not written directly by you without proper citation

(including quotation marks and in-line citation for direct quotes). Including anything you did not write in your assignment without proper citation will be treated as an academic misconduct case.

You are not permitted to Copy your conversation with an AI assistant. You can copy your own work into your conversation, but do not copy anything from the conversation back into your assignment. Instead, use your interaction with the AI assistant as a learning experience, then let your assignment reflect your improved understanding.

Do not have your assignment and the AI agent open at the same time. Similar to above, use your conversation with the AI as a learning experience, then close the interaction down, open your assignment, and let your assignment reflect your revised knowledge.

Late Assignments

Assignments submitted on Canvas after published due dates will be considered late. There is no late assignment is accepted for Tuesday lab. For Thursday lab, a penalty of 10 percent per day will be assessed for each day that an assignment is late, up to 2 days. After 2 days, post-lab assignments will NOT be accepted. If you submit an assignment late that requires manual grading, email your teaching assistant to notify them.

Regrade Policy.

Your TA grades your work based on rubrics and keys provided by the First-year Chemistry faculty. If you have questions about why something was graded a certain way or what you can do to improve your scores, talk with your TA first. You may submit a formal regrade request to your TA if you have a specific grievance. Re-grade requests must be submitted in writing or via email within 7 days of the grade being posted to Canvas. To submit a regrade request, either (a) attach a written description of your concern to your lab report and give it to your TA or (b) send an email to your TA with specific information about why you believe the initial grading was incorrect. First-year Chemistry faculty should be contacted only if you and your TA cannot reach a mutually agreeable decision. At meetings to discuss regrades with faculty, both the student and TA must be present.

Laboratory Safety Policies.

1. Proper attire is required in lab at all times. Anyone lacking appropriate dress is forbidden from entering the lab. Proper attire includes:
 - a. Close-toed shoes and socks covering the entire foot.
 - b. Long pants covering the entire leg. Capris are never in fashion in the chemistry lab. While standing, no skin may be exposed below the waist.
 - c. A 100% cotton lab coat.

- d. Safety glasses or goggles. Eye protection must be donned immediately upon beginning work in the lab and may not be removed until you walk out the door.
2. Gloves must be worn in the laboratory throughout the duration of the day's experiment. Replace gloves that have become excessively sweaty or dirty—using many gloves is OK!
 - a. Gloves should be donned just before beginning the day's experiment.
 - b. To avoid contaminating us poor saps who work in Clough (and for other good reasons), gloves must be removed upon leaving the lab.
3. Eating, drinking, and smoking are prohibited in the laboratory. The only thing entering one's body during the laboratory period should be a 78:21 mixture of N₂(g) and O₂(g).
4. Cell phones may not be used in the laboratory, except in specific circumstances at the discretion of the teaching assistant. Consult your TA prior to using a cell phone (including the use of apps) in the laboratory. Gloves must be removed prior to using a cell phone.
5. At the end of the lab period, lab areas should be left clean (i.e., as they were when lab began). Hands should be washed before leaving the lab.
6. Waste must be placed in appropriate containers. If you are in doubt about where to put a substance, ask the teaching assistant or lab coordinator.
7. Please do not hesitate to report safety-related incidents to your teaching assistant, including minor spills. Promoting a culture of safety is everyone's responsibility and should come with no shame or stigma. We report significant safety incidents to the School of Chemistry and Biochemistry Safety Committee and Georgia Tech Environmental Health and Safety not to punish those involved, but to catalyze a conversation about how future incidents can be avoided.

Campus Resources for Students

Undergraduate Student Academic Success Resources:

- Academic Support: Academic Success and Advising (a unit in the Office of Undergraduate Education & Student Success) provides free support for your courses. Students can attend scheduled supplemental review (PLUS) sessions, stop by Drop-In Tutoring, or schedule a one-on-one appointment through Knack. To explore what options work best for you, please visit us online at success.gatech.edu/tutoring, email us at tutoring@gatech.edu, or come see us at Clough Undergraduate Learning Commons, Suite 283.

Student Well-Being:

At Georgia Tech, we are concerned about your overall physical, social, and mental well-being. A [comprehensive list](#) of wellness related resources has been compiled and

maintained by the Office of the Vice President for Student Engagement and Well-being
([student-resource-guide \(gatech.edu\)](https://student-resource-guide.gatech.edu))