University of Texas at Tyler

CHEM 1111:General Chemistry I Laboratory
Ms. Colleen Trainor

Syllabus
Summer
2024

Contact Info

Instructor:
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Welcome to General Chemistry I Lab

Introduction

Chemistry is an experimental science. Chemical knowledge has resulted from experimental observations and studies made by thousands of scientists over many centuries. In the chemistry laboratory, students will examine, test, and establish for themselves the chemical principles studied in class and from textbooks; will collect experimental data; and will use their reasoning to draw logical conclusions about the meaning of these data.

Prerequisite: Credit for, or concurrent enrollment in, General Chemistry I (CHEM 1311)

Student Learning Outcomes

1) Demonstrate the ability to make scientific predictions of natural phenomena using chemical concepts
2) Develop skills in collecting and managing data in order to express their results in a precise and reliable quantitative or qualitative form on lab reports.
3) Apply chemical concepts to draw logical conclusions about the applicability of data to real-world problems
4) Use collected data to calculate physical or chemical quantities germane to the experiment being performed
5) Develop teamwork skills that include not only the efficient acquisition of experimental data, but also the awareness of safety in the laboratory setting
6) Become proficient in using basic apparatus and applying experimental methodologies in the laboratory setting

Required Course Materials

- Each student must purchase and maintain a bound **laboratory notebook** in which to generate a permanent record of experimental observations, notes, calculations, etc. The lab record book you purchase must provide:
  • a table of contents page
  • pages consecutively prenumbered
  • preprinted page headings for entering title, date, name, and specific lab section (e.g., CHEM 1111.001)
  • a perforated, carbonless duplicate for each page
- Splash-proof **safety goggles** must be worn in the laboratory whenever you or your neighbors are performing experiments.
  (Time during your initial lab period will be allotted for purchasing goggles from your American Chemical Society Student Affiliates on campus to ensure that you will be prepared to comply with this requirement.)
  Warning: students will not be admitted into the lab without splash-proof goggles!
- **Lab appropriate clothes**, students must plan ahead to be clothed appropriately for laboratory work.
  Warning: students will not be allowed to work in the lab without an effective coverage from chest to toes! (This means no open-toed shoes or extensive
  areas of exposed skin on your torso!) If you do not meet these requirements, you cannot work in the lab until the requirements are met
- CHEM 1111 General Chemistry I **Laboratory Manual**, Department of Chemistry, The University of Texas at
  Tyler, Tyler, Texas, 2016. - *Provided Online Through Canvas*
- **Scientific calculator**
- **Computer** access with Microsoft Excel and Word

Course Requirements

- Students who perform unauthorized experiments or who remove chemicals or equipment from the lab may be dropped from the course or have their grades lowered
- Arrive on time and be prepared for each laboratory session. There are pre-lab videos available on Canvas. You are required to watch the assigned videos before coming to lab. The laboratory experiments are such that the average student can complete the work during the assigned time. This can be accomplished only if a reasonable amount of study and preparation has been done before coming to the laboratory.
- Students are responsible for laboratory equipment furnished by the Department of Chemistry and students may be required to purchase any missing or damaged equipment
- The grading of experiments will be based on the evaluations of each student's laboratory performance, experimental results, and the quality of their laboratory reports (i.e., analyses and presentations of results.)
- Students will be responsible for maintaining cleanliness in the desk areas. Students who neglect their clean-up responsibility will have their grades significantly lowered for that day's work.
- Students are required to turn in a lab report for each experiment. Your instructor will explain what is expected in the lab reports.

Safety Policy

Read, comprehend, and follow the laboratory safety guidelines at all times. These rules include, but are not limited to: **Safety goggles must be worn** in the laboratory at all times. Students who do not have safety goggles will not be admitted into the laboratory. You will not be allowed in the lab with open-toed shoes or any clothing exposing extensive areas of your skin to the risks of burns or chemical splashes. Please come to class each day wearing long pants or skirt, an appropriate shirt, and closed toe shoes. There is not sufficient time for you to return home to change clothes.

Do not consume anything by mouth in the lab, including water, gum, and smokeless tobacco!

Do not perform unauthorized experiments or remove chemicals or equipment.

Note: we take safety infractions very seriously. Depending on the seriousness of such infractions, you may lose points on your lab work habits grade, be dismissed and receive a zero on any work missed, or even be dropped from the course

Attendance Policy

Attendance is essential. Labs must be completed in-person during the scheduled lab time. ***An unexcused absence results in a grade of zero for any lab work missed.***

Normally, an excused absence includes medical emergencies, a death in your family or required travel for a UT Tyler's event (*e.g.,* athletic team travel). All supporting documentation should be presented to the instructor.

Students who anticipate being absent from class due to a religious observance are *required* to inform their instructors of such absences as soon as possible (at least one week before the religious holiday). Students who anticipate being absent from class due to a required travel for a UT Tyler's event (e.g., athletic team travel) are *required* to inform their instructor of such absences at least one week before the absence.

Grading Scale

- Grades will tentatively be assigned on a 90/80/70/60 scale, but may be adjusted based upon my evaluation of the overall class performance.
- Grades will be posted on Canvas and weighted as shown to the right:

Please inform me of any mistakes. They do happen! Grades will only be changed within a week of the grades being posted

Pre-lab quizzes	10%
Lab reports	60%
Post-lab quizzes	15%
Teamwork Project	15%
Total*	**100%**

Pre-lab Quizzes (10%, 1 dropped):

These quizzes will be given on Canvas and must be completed **before** the lab start time. They will consist of short answer, multiple choice, and simple calculation questions. All the relevant material is found in the Canvas module for that experiment and the lab manual

Lab Reports (60%):

Lab reports make a large portion of your grade so please take care when preparing your report. Laboratory reports will be completed and submitted in-person at the end of each experiment. All reports will be written during class in the laboratory notebook. Copies of the notebook pages and completed Summary Report sheets are required for each report. It is important that you can properly write, format and communicate a scientific document effectively. You will be working in pairs to complete the experiment but each person must turn in their own separate lab reports. Each experiment is different, therefore, the lab report and the items required within may change for each experiment. Some experiments may required the use of Microsoft Word & Excel (or equivalent) and LoggerPro. Your instructor will provide you with details for those experiments.

The lab report grade will be broken down as follows:

Pre-Lab Write-up: Before coming to lab please write up Heading, Purpose, Procedure, and Safety in your laboratory notebook. This is a completion grade. If it is not completed before lab, 10% will be deducted. Your heading, purpose, and procedure are not graded at this time and are still subject to point deduction (see below):

Purpose Write one or two sentences describing the objective of the experiment.

Procedure Write out each step of the experiment in enough detail that another person would be able to replicate it

Safety A section that describes unique safety hazards for each chemical used in the experiment.

Style & Formatting organization, neatness, grammar, etc. Hand writing that is not legible is subject to point deduction. When in doubt, follow the format of the Laboratory Notebook Guide posted on Canvas under Course Documents

Results Section

Summary report sheets graded for accuracy and precision

Data (Notebook) - Organized data collected during the lab which includes measurements and observations.

Calculations All calculations should be recorded in the notebook. In cases where the same type of calculation is repeated multiple times, a single representative calculation is sufficient.

Conclusion A short paragraph summarizing your results and addressing how well the purpose of the experiment was achieved

* Changes to this format will be addressed in lab by your instructor.

Post-lab Quizzes (15%, 1 dropped):

These quizzes will be given on Canvas and will be due **48 hours after the experiment**. These quizzes will be more challenging and will often require the use of the data you collected in lab, so make sure you have all your data on hand before opening the quiz.

Teamwork Project (15%):

While it is important to be able to communicate scientific information in writing, it is equally important to do the same orally. As a group, you and your teammates will be required to collaborate and develop a presentation covering molecular geometry, valence shell electron pair repulsion, hybridization, etc. for an assigned molecule. Students will also create a 3D model of a their molecule. You must present your lecture live during our scheduled lab time, and part of your grade for this assignment will be a peer review about how well you contributed to the project. More specific details for the project will be given as we approach the presentation date.

Email Policy

- I will to respond to email regularly during normal business hours
- After hours and on weekends, I will respond as my schedule allows
- Please don't expect responses to emails sent after 10 pm until at least 9 or 10 am the next day

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Schedule

June 3	Introduction to Course – Syllabus, Schedule, Lab Notebook, Safety
June 4	1. Measurements in Chemistry
June 6	2. Determining the Density of Solids and Liquids
June 10	3. Separating Components of a Mixture
June 11	4. Chromatography
June 13	5. Determining the Formula of a Hydrate
June 17	6. Reactions of Copper
June 18	7. Acid-Base Titrations
June 20	8. Thermochemistry
June 24	9. Atomic Emission Spectra
June 25	10. Molecular Geometry and Bonding
June 27	Teamwork Project Presentation
July 1	Make-up Lab (if needed)
July 2	Study break – use this time to prepare for the final or stop by my office

Your instructor retains the right to substitute or switch labs as required by unforeseen circumstances

Lab procedures are provided in the lab manual on Canvas

University Policies

Withdrawing from Class

Students are allowed to withdraw (drop) from a course through the University's Withdrawal Portal. Texas law prohibits students who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. The number includes courses dropped at other 2-year or 4-year Texas public colleges and universities. Make sure to consider the impact withdrawing from any course has on your academic progress as well as the financial implications. We encourage you to consult your advisor(s) and financial aid for additional guidance. CAUTION #1: Withdrawing before census day does not mean students receive a full refund. Please see the Tuition and Fee Refund Schedule. CAUTION #2: All international students must check with the Office of International Programs before withdrawing. All international students are required to enroll full-time for fall and spring terms.

Incomplete Grade Policy

If a student, because of extenuating circumstances, is unable to complete course requirements by the end of the semester, then the instructor may recommend an Incomplete (I) for the course. The "I" may be assigned in lieu of a grade only when all of the following conditions are met: (a) the student has been making satisfactory progress in the course; (b) the student is unable to complete all course work or final exam due to unusual circumstances that are beyond personal control and are acceptable to the instructor; and (c) the student presents these reasons prior to the time that the final grade roster is due. The semester credit hours for an Incomplete will not be used to calculate the grade point average for a student. The student and the instructor must submit an Incomplete Form detailing the work required and the time by which the work must be completed to their respective department chair or college dean for approval. The time limit established must not exceed one year. Should the student fail to complete the work for the course within the time limit, the instructor may assign zeros to the unfinished work, compute the course average for the student, and assign the appropriate grade. If a grade has not been assigned within one year, then the Incomplete will be changed to an F or to NC, if the course was initially taken under the CR/NC grading basis.

Grade Appeal Policy

UT Tyler's Grade Appeal policy requires the completion of a Grade Appeal form for this action to take place. The grade appeal begins with the instructor of the course. If a student does not agree with the decision of the instructor, the student may then move the appeal to the department chair/school director for that course. If the student is still dissatisfied with the decision of the chair/director, the appeal moves to the Dean of the College offering that course, who has the final decision. Grade appeals must be initiated within sixty (60) days from the date of receiving the final course grade.

Disability/Accessibility Services

In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA), The University of Texas at Tyler offers accommodations to students with learning, physical and/or psychological disabilities. If a student has a disability, including a non-visible diagnosis such as a learning disorder, chronic illness, TBI, PTSD, ADHD, or a history of modifications or accommodations in a previous educational environment, the student is encouraged to visit https://hood.accessiblelearning.com/UTTyler and fill out the New Student application. The Student Accessibility and Resources (SAR) office will contact the student when the application has been submitted and schedule an appointment with the Assistant Director Student Accessibility and Resources/ADA Coordinator.

Military Affiliated Students

UT Tyler honors the service and sacrifices of our military-affiliated students. If you are a student who is a veteran, on active duty, in the reserves or National Guard, or a military spouse or dependent, please stay in contact with your faculty member if any aspect of your present or prior service or family situation makes it difficult for you to fulfill the requirements of a course or creates disruption in your academic progress. It is important to make your faculty member aware of any complications as far in advance as possible.