CHEM 1112 General Chemistry II Laboratory

Syllabus | Summer II 2026

The University of Texas at Tyler

Course Description

Continuation of CHEM 1111, including qualitative analysis; volumetric, gravimetric, and potentiometric analyses; and an introduction to chemical instrumentation. Satisfies 1 hour of the STEM component of the core curriculum.

Prerequisite: General Chemistry I Lab (CHEM 1111), and credit for or concurrent enrollment in General Chemistry II (CHEM 1312).

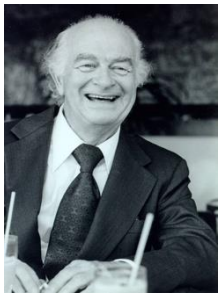
Chemistry is an experimental science. Chemical knowledge has resulted from experimental observations and studies made by thousands of scientists over many centuries. In the chemistry laboratory, students will examine, test, and establish for themselves the chemical principles studied in class and from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

Student Learning Outcomes

- Demonstrate the ability to make scientific predictions of natural phenomena using chemical concepts learned in the lab (Critical Thinking Skills)
- 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 (Empirical and Quantitative Skills, Communication Skills)
- Apply chemical concepts to draw logical conclusions about the applicability of data to real-world problems (Critical Thinking Skills)
- Use collected data to calculate physical or chemical quantities relevant to the experiment being performed (Empirical and Quantitative Skills)
- Develop teamwork skills that include not only the efficient acquisition of experimental data, but also the awareness of safety in the laboratory setting (Teamwork)

In addition to the core objectives being assessed, students will also be expected to:

- Become proficient in using basic apparatuses and applying experimental methodologies in the laboratory setting
- Demonstrate safe and proper handling of laboratory equipment and chemicals



"…To awaken an interest in chemistry in students we mustn't make the courses consist entirely of explanations, forgetting to mention what there is to be explained."

Linus Pauling, 1954 Chemistry Nobel Prize for "2 Electrons in a Bond"

Instructor

Mrs. Mara Aucoin

- maucoin@uttyler.edu
- Office: RBS 3029
- Office Hours: Mon, Tue, Thu 10:45 – 11:45 am or by appt

Meeting

Section:	1112.401
Day:	M, Tu, Th
Time:	1 – 5 pm
Room:	RBS 3018

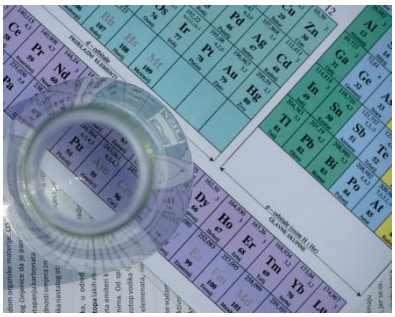
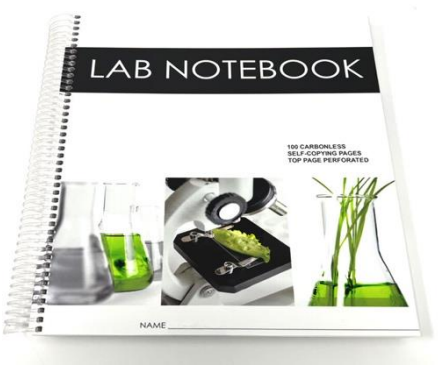


Table of Contents

Course Overview	1
Student Learning Outcomes	1
Required Materials	2
Laboratory Expectations	2
Safety Policy	3
Attendance Policy	3
Email Policy	3
Dropping the Course	3
Artificial Intelligence Policy	3
Grading Policies	4
Laboratory Experiment Schedule	5
University Policies	6

Required Materials



Laboratory Notebook: 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 label for your name and contact information (phone, email, or other), course prefix (CHEM), course and section number (*e.g.* 1112.001), semester, and the instructor's name
- a table of contents page • pages consecutively pre-numbered
- preprinted page headings for entering title, date, name, and specific lab section (*e.g.*, CHEM 1112.001)
- a perforated, carbonless duplicate for each page.

Lab Manual: CHEM 1112 General Chemistry II Laboratory Manual, Department of Chemistry, The University of Texas at Tyler, Tyler, Texas, 2014. **Provided online through Canvas.**

Scientific Calculator

Computer Access: with Microsoft Excel, PowerPoint, Word, Zoom, and LoggerPro (free for students through course).

Personal Protect Equipment (PPE):

1. **Splash-Proof 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!
2. **Nitrile Gloves** must be worn in the laboratory whenever you are handling chemicals and performing experiments. Gloves will be provided.
3. **Lab appropriate clothing,** Students must plan ahead to clothes 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 will not be allowed entry to the lab.

Laboratory Expectations

- 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 at the instructor's discretion.
- Arrive on time and be prepared for each laboratory session. The laboratory experiments are such that the average student can complete the work during the assigned time 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 (*e.g.* properly following safety protocols, participating in their lab group, maintaining a clean workspace, *etc.*), experimental results, and the quality of their laboratory reports (*i.e.*, analysis 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, a shirt that fully covers your torso as you work and closed toe shoes. There is not sufficient time for you to return home to change clothes, and we offer NO opportunity to make-up missed labs for safety violations.

Do not consume anything by mouth in the lab, including gum and smokeless tobacco! There is no eating in the lab space.

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 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 instructor 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.

Email Policy

- I will respond to emails 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 8 pm until at least 9 or 10 am the next day

Dropping the Class

The last day to withdraw from the course with an automatic grade of "W" is listed on the laboratory schedule. Before dropping the course, you should consult with your instructor to examine all of your options. Dropping this course does not obligate you to also drop the lecture course because they are two separate courses. However, dropping the lecture course may significantly hinder your progress in this course because you will be expected to learn the chemical theories and concepts on your own.

Artificial Intelligence Policy

UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy. Refer to the About This Course section of the UT Tyler Syllabus Module for specific information on appropriate use of AI in your course(s).

For this course, **AI is not permitted at all.** In this course, all work submitted by students must be their own ideas and thoughts. All assignments and course experiments have been designed to support learning. Doing work without human or artificial intelligence will provide and support you in your efforts of mastering the course material. In this course, any AI tools, for example ChatGPT, is prohibited throughout the semester. Deviations from these guidelines will be considered a violation of UT Tyler's Honor Code and academic honesty values.

Grading Policies

- 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:

Pre-lab Quizzes	15%
Lab Reports	25%
Post-lab Quizzes	25%
Lab Practical Exam	20%
Teamwork Project	15%

Please inform your instructor of any mistakes in grading. They do happen!
However, grades will only be changed within a week of the grades being posted.

Pre-lab Quizzes (15%, 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/or simple calculation questions. All the relevant material is found in the Canvas module for that experiment and the lab manual. Students will have one attempt on the quiz with no time limit. These will not be accepted late or reopened. The quiz with the lowest score will be dropped.

Post-Lab Quizzes (25%): Post-Lab quizzes will be given on Canvas after experiments 1-4. These quizzes will cover discussion and theoretical topics related to the completed experiment. These quizzes will be more challenging and are designed to assess your mastery of the experimental concepts as well as help prepare you for writing your lab reports. They will be due two days after the corresponding experiment. Notebook pages will also be assessed with post-lab quizzes. These will not be accepted late or reopened.

Lab Reports (25%): All laboratory reports will be generated digitally, printed, and turned in at the beginning of class two lab periods later. It is important that you can properly write, format and communicate a scientific document digitally. You will be required to provide a title page, an experimental section, a data/results section, and a discussion. This will be done for experiments 5-8. To accomplish this, you may need to generate tables and graph to properly communicate the information. You will be required the use Microsoft Word & Excel (or equivalent) and LoggerPro to properly format your work. Your instructor will provide you specific details of required information for each experiment. In general:

> **Formatting** should be Times New Roman or Arial, 12 pt, double spaced, and either justified or left-aligned text. It needs to be written in third-person POV and past tense. Figures and tables should have proper labels and captions. Two pages MAX (excluding figures, tables, and title page).
>
> **Title Page** should be a separate page. It should include the experiment title, your name, your lab partners name(s), and the date the experiment was conducted, course number and section (CHEM 1112.401), and your instructor's name.
>
> **Experimental** section should be specific yet concise. It should be written in paragraph form (NO BULLET POINTS). All chemicals used with their corresponding concentrations should be given. Volumes may be given where they are relevant. Any deviations from the lab manual need to be stated explicitly.
>
> **Data/results** should have all necessary figures and tables. Relevant data for each experiment is listed in the lab manual.
>
> **Discussion/Conclusion** should briefly summarize the purpose and highlights of the experimental results. Comments on how well the objective was attained based on the data should be given as well as potential sources of error. A few discussion questions for each experiment will also be given to answer in this section.

Lab Practical Exam (20%): Designed to test your understanding of topics taught in General Chemistry II lab. Exam will have both experimental and theoretical questions on it, so you want to make sure you know how to do an experiment and the background knowledge to complete any calculations or answer open-ended questions. You will signup for a time to complete the exam during your scheduled lab time.

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.

University Policies

- **Withdrawing from Class** - Students, you are allowed to withdraw (drop) from this course through the Withdrawal Portal. Withdrawing from classes can impact Financial Aid, Scholarships, Veteran Benefits, Exemptions, Waivers, International Student Status, housing, and degree progress. Please read this page, speak with your instructors, consider your options, and speak with your instructor. UT Tyler faculty and staff are here for our students and often can provide additional support options or student assistance**.** Please read the implications for withdrawing from a course and the instructions on using the Withdrawal portal on the Registrar's Withdrawal page.

  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. This includes courses dropped at other 2-year or 4-year Texas public colleges and universities. Consider the im-pact withdrawing from this class has on your academic progress and other areas, such as 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 you get a full refund. Please see the Tuition and Fee Refund Schedule. CAUTION #2: All international students must check with the Office of International Pro-grams before withdrawing. All international students are required to enroll full-time for fall and spring terms. CAUTION #3: All UT Tyler Athletes must check with the Athletic Academic Coordinator before withdrawing from a course. CAUTION #4: All veterans or military-affiliated students should consult with the Military and Veterans Success Center.
- **Final Exam Policy**: Final examinations are administered as scheduled. If unusual circumstances require that special arrangements be made for an individual student or class, the Dean of the appropriate college, after consultation with the faculty member involved, may authorize an ex-ception to the schedule. Faculty members must maintain student final examination papers for a minimum of three months following the exami-nation date.
- **Incomplete Grade Policy**: If a student, because of extenuating circumstances, is unable to complete all of the requirements for a course by the end of the semester, then the instructor may recommend an Incomplete (I) for the course. The "I" may be assigned in place 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 coursework 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 before 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. 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 meet all of the work for the course within the time limit, then 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 yet to be assigned within one year, then the Incomplete will be changed to an F, or NC. If the course was initially taken under the CR/NC grading basis, this may adversely affect the student's academic standing.
- **Grade Appeal Policy:** Disputes regarding grades must be initiated within sixty (60) days from the date of receiving the final course grade by filing a Grade Appeal Form with the instructor who assigned the grade; this is separate from the Application for Appeal form submitted to the Student Appeals Committee, which does not rule on grade disputes as described in this policy. If the student is not satisfied with the decision, the student may appeal in writing to the Chairperson of the department from which the grade was issued. In situations where there is an allega-tion of capricious grading, discrimination, or unlawful actions, appeals may go beyond the Chairperson to the Dean of the college from which the grade was issued, with that decision being final. The Grade Appeal form is found in the Registrar's Form Library.
- **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 psycho-logical disabilities. If you have 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, you are encouraged to visit https://hood.accessiblelearning.com/UTTyler and fill out the New Student application. The Student Accessibility and Resources (SAR) office will contact you when your application has been submitted and an appointment with the Assistant Director Student Accessibility and Re-sources/ADA Coordinator. For more information, including filling out an application for services, please visit the SAR webpage at https://www.uttyler.edu/disability-services, the SAR office located in the University Center, # 3150, or call 903.566.7079.
- **Military Affiliated Students**: UT Tyler honors the service and sacrifices of our military-affiliated students. If you are a student who is a veter-an, 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. Your faculty member is willing to work with you and, if needed, put you in contact with university staff who are trained to assist you. The Military and Veterans Success Center (MVSC) has campus resources for military-affiliated students. The MVSC can be reached at MVSC@uttyler.edu or via phone at 903.565.5972.
- **Academic Honesty and Academic Misconduct:** The UT Tyler community comes together to pledge that "Honor and integrity will not allow me to lie, cheat, or steal, nor to accept the actions of those who do." Therefore, we enforce the Student Conduct and Discipline policy in the Student Manual Of Operating Procedures (Section 8).
- **FERPA** - UT Tyler follows the Family Educational Rights and Privacy Act (FERPA) as noted in University Policy 5.2.3. The course instruc-tor will follow all requirements to protect your confidential information.
- **Absence for Official University Events or Activities**: This course follows the practices related to approved absences as noted by the Student Manual of Operating Procedures (Sec. 1 -501).
- **Absence for Religious Holidays:** This course follows the practices related to Excused Absences for Religious Holy Days as noted in the Cata-log.
- **Campus Carry:** We respect the right and privacy of students who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at http://www.uttyler.edu/about/campus-carry/index.php.

Laboratory Experiment Schedule

CHEM 1112 General Chemistry II Laboratory

Summer II 2026

Date		Experiment Scheduled
July 6	M	Introduction to course, syllabus, schedule, lab notebooks & reports, lab safety
July 7	T	Basic Excel Skills, Measurements, and Lab Report Workshop
July 9	**Th**	Exp 1: Exploring the Properties of Gases **Census Date (Last Day to Drop the Course)**
July 13	M	Exp 2: Synthesis of Alum
July 14	T	Exp 3: Determining Molar Mass by Freezing Point Depression
July 16	Th	Exp 4: Spectrophotometric Determination of Food Dyes
July 20	M	Exp 5: Determining Reaction Rate by Initial Rate Method
July 21	T	Exp 6: Determining the Acid Dissociation Constant of a Weak Acid
July 23	Th	Exp 7: Functional Groups and Molecular Geometry and Bonding
July 27	M	Exp 8: TBD
July 28	T	Exp 9: TBD
July 29	**W**	**Last Day to Withdraw from the Course**
July 30	**Th**	**Laboratory Practical Exam**
Aug 3	M	Make-up Lab (if needed)
Aug 4	**T**	**Teamwork Project Presentation**
Aug 6	Th	NO LAB – DAY OFF

Note: the right to substitute or switch labs, as required by unforeseen circumstances, is reserved. All lab procedures are provided in your lab manual.