THE UNIVERSITY OF TEXAS AT TYLER

Syllabus for CHEM 1112.401 & CHEM 1112.D401

SYLLABUS
SUMMER II 2023
JUL 3 – AUG 5

WHAT'S INSIDE?

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.

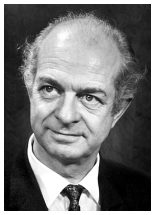
Prerequisite: General Chemistry I Lab (CHEM 1111), and credit for or concurrent enrollment in General Chemistry II (CHEM 1312).

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 their data.

"...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

(Nobel Prize winner, "2 electrons in a bond")



Meeting Times and Dates

Section	Day	Time	Room
1112.401	M, Tu, Th	1–5 pm	RBS 3022
1112.D401	M, Tu, Th	1–5 pm	RBS 3022

Instructor Contact Information

Instructor	Office	Office Hours	Email	Phone
Rahma Aly	RBS 2013	M, Tu, Th 11-noon	raly@patriots.uttyler.edu	N/A
Dr. Jason Smee (instructor of record)*	RBS 3030	M-F 11-noon	jsmee@uttyler.edu	903.566.7069

*The instructor of record is the person primarily responsible for posting final course grades and is not the person who will be instructing students in the lab. If there are issues with the in-person instructor that cannot be resolved, please contact the instructor of record first, not the department chair, the dean or the president.

Core Curriculum and Course-Specific Student Learning Outcomes

- Students will demonstrate the ability to make scientific predictions of natural phenomena using chemical concepts learned in the lab. (Core: Critical Thinking Skills)
- Students will 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. (Core: Empirical and Quantitative Skills, Communication Skills)
- Students will apply chemical concepts to draw logical conclusions about the applicability of data to real-world problems. (Core: Critical Thinking Skills)
- Students will use collected data to calculate physical or chemical quantities germane to the experiment being performed. (Core: Empirical and Quantitative Skills)
- Students will develop teamwork skills that include not only the efficient acquisition of experimental data, but also the awareness of safety in the laboratory setting. (Core: Teamwork)
- Use basic apparatus and apply experimental methodologies in the chemistry laboratory setting (course specific)
- Demonstrate safe and proper handling of laboratory equipment and chemicals (course-specific)

Required Materials for Lab Work

Laboratory Notebook

- Each student must purchase and maintain a bound laboratory notebook in which to generate apermanent record of experi- mental 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 num- ber (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 1112.006); and
    - a perforated, carbonless duplicate for each page.

Lab Manual (provided on Canvas): CHEM 1112 General Chemistry II Laboratory Manual, Department of Chemistry, The Univer- sity of Texas at Tyler, Tyler, Texas, 2014.

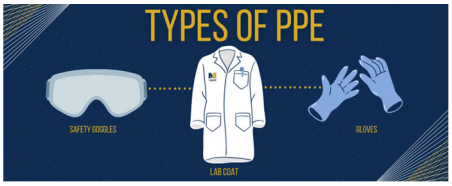
Scientific Calculator

Access to a General Chemistry Lecture Textbook: This item may be needed as a reference to complete laboratory assignments.

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 Stu- dent Affili- ates 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. **Face masks** are not required. Per the CDC guidelines, they are strongly encouraged for those who are not vaccinated.
3. Students must also 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 ex- tensive 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.



Laboratory Requirements and 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.
- 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. This can be accomplished only if a reasonable amount of study and preparation has been done before coming to the laboratory. Plan what is to be done in each experiment before coming to the lab. It will save time and will aid in avoiding serious mistakes.
- 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 will be responsible to maintain a clean work area during each lab session Students will be required to clean/sanitize their area of responsibility which may include cleaning/ sanitation of shelves, sinks, hoods, reagent tables, and glassware/equipment. Students who neglect their clean-up responsibilities will have their grades significantly lowered for that day's work. Therefore, it is important that students have their clean-up duties approved by the lab instructor before leaving lab.
- Students are required to turn in a lab report for each experiment. Your instructor will explain what is expected in the lab reports.
- The instructor may provide an addendum to this syllabus listing specific requirements for that section.

Lab Safety Policies

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 and we have NO opportunity to make-up missed labs because of failure to wear appropriate lab attire.
- 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.

> "Chlorine is a deadly poison gas employed on European battlefields in World War I. Sodium is a corrosive metal which burns upon contact with water. Together they make a placid and unpoisonous material, table salt. Why each of these substances has the properties it does is a subject called chemistry." – Carl Sagan *In* 'Can We Know the Universe? Reflections on a Grain of Salt,' by John Carey, *Eyewitness to Science* (1997), 437.

Attendance Policies

- Lab attendance is essential. ***One*** make up lab is allowed (for ***one***, ***excused*** absence only).
- An unexcused absence results in a grade of zero for any lab work or exam 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 lab instructor.
- Students who anticipate being absent from class due to a religious observance must inform the instructor at least one week before the religious holiday. Students who anticipate being absent from class due to a required travel for a UT Tyler event (e.g., athletic team travel) are required to inform their instructors of such absences at least one week before the absence.

Grading Policies

The grading of the lab reports, quizzes, and exams are up to your instructor; however the weighting of these items will be uniform across all lab sections (see below). Your overall course grade will tentatively be based on a 90/80/70/60 percentage scale, but it may be adjusted based upon your instructor's judgment of the overall class performance.

Grades for this course will be weighted as follows:

15%	Pre-Lab Quizzes
30%	Laboratory Reports
20%	Post Lab Quizzes
15%	Laboratory Exam
20%	Laboratory Notebook
100%	**Total**

Pre-Lab Quizzes

Pre-lab quizzes will be given before each lab meeting to encourage you to be prepared for class. It is essential that all students come prepared to start working on their experiment as soon as class begins.

Laboratory Reports

All laboratory reports will be generated and submitted digitally through Canvas. Also, in this digital age, it is important that you can properly write, format and communicate a scientific document digitally. Each experiment is different, therefore, the lab report and the items required within will change for each experiment. You will be required to report a brief introduction of the experiment, results collected during the experiment, and a conclusion. To accomplish this, you may need to generate tables and graph to properly communicate the information, and you will be required the use Microsoft Word & Excel (or equivalent) and LoggerPro. Your instructor will provide you details of required information for each experiment.

Post Lab Quizzes

Post-Lab quizzes will be given on Canvas after each experiment is completed. 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.

Laboratory Exam

There will be one exam at the end of the semester that will cover all of the labs conducted during the semester. The exam will consist of hand-written questions as well as hands-on activities.

Laboratory Notebook

Maintaining detailed records of your laboratory work is vital for producing quality scientific reports or publications. A scientific investigator cannot prove their work is valid without a properly maintained notebook. By far, this record is one of the most important aspects of experimentation or research, and therefore will be an important part of your overall grade in this course. Your laboratory instructor will guide you in maintaining a laboratory notebook over the course of the class.

Withdrawing/Dropping the Course

The last day to withdraw from the course with an automatic grade of "W" is Wednesday, July 26. 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

Laboratory Experiment Schedule

Date	Experiment Schedule
Jul 3 (M)	Introduction to course, syllabus, schedule, lab notebooks & reports, lab safety
Jul 4 (Tu)	Independence Day, no class
Jul 6 (Th)	Lab: Exploring the Properties of Gases
Jul 10 (M)	Lab: Synthesis of Alum
Jul 11 (Tu)	Lab: Modeling of Crystalline Lattice Structures
Jul 13 (Th)	Lab: Spectrophotometric Determinations of Food Dyes
Jul 17 (M)	Lab: Determining Molar Mass by Freezing Point Depression
Jul 18 (Tu)	DAY OFF—STUDY!
Jul 20 (Th)	Lab: Determining Reaction Rate by the Initial Rate Method
Jul 24 (M)	Lab: Determining the Acid Dissociation Constant of a Weak Acid
Jul 25 (Tu)	Day Off—STUDY!
July 26 (W)	**Last Day to Withdraw from/Drop the Course**
Jul 27 (Th)	Lab: Review of Molecular Geometry and Bonding
Jul 31 (M)	**LABORATORY EXAM**
Aug 1 (Tu)	Day Off—STUDY!
Aug 3 (Th)	Day Off—STUDY! (May schedule review session for lecture final exam)

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

University Policies and Information

- **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 impact 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 Programs 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 exception to the schedule. Faculty members must maintain student final examination papers for a minimum of three months following the examination 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 allegation 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 psychological 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 Resources/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 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. 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 instructor 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 Catalog.

- **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.