# CHEM 1112

## General Chemistry II Laboratory

Department of Chemistry and Biochemistry

**Syllabus**
**Spring 2026**

The University of Texas at Tyler
3900 University Blvd.
Tyler, TX 75799

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# Meeting Times and Dates

**Semester runs from Jan 12 to Apr 24**

| Section | Day & Time | Room | Instructor |
|---|---|---|---|
| 001 | Mon, 1:00-5:00 PM | RBS 3018 | **Kevin Villeda-Olmos** *Dr. Tanya, Shtoyko |
| 002 | Tues, 8:30 AM-12:30 PM | RBS 3018 | **Mr. Jerome Lewis** |
| 003 | Tues, 8:30 AM-12:30 PM | RBS 3022 | **Michael Torres** * Dr. Kai Zhang |
| 004 | Tues, 1:30-5:30 PM | RBS 3018 | **Mara Aucoin** *Dr. Tanya Shtoyko |
| 005 | Wed, 1:00-5:00 PM | RBS 3018 | **Michael Torres** *Mrs. Lauren Johnson |
| 006 | Wed, 1:00-5:00 PM | RBS 4014 | **Mara Aucoin** *Dr. Rachel Mason |
| 007 | Thurs, 8:30 AM-12:30 PM | RBS 3018 | **Kevin Villeda-Olmos** *Mr. Jerome Lewis |
| 008 | Thurs, 1:30-5:30 PM | RBS 3018 | **Nora McElroy** *Dr. Dustin Patterson |

*Instructor of Record for listed section

### Instructor Contact Information

| Instructor | Office | Office Hours | Email | Phone |
|---|---|---|---|---|
| Kevin Villeda-Olmos | TBA | | kvillledaolmos@patriots.uttyler.edu | N/A |
| Michael Torres | TBA | | mtorres14@patriots.uttyler.edu | N/A |
| Mara Aucoin | TBA | Mon, Tues, Wed 10-11 AM | mgriffin11@patriots.uttyler.edu | N/A |
| Nora McElroy | TBA | Mon, 12-1:30 PM<br>Wed 2-3:30 PM | nmcelroy2@patriots.uttyler.edu | N/A |
| Mr. Jerome Lewis<br>Lab Instruc-tor/Coordinator | RBS 3013 | Tu & Th, 3:30 pm-5:30 pm<br>Fri, 10:00 am-11:00 am | jeromelewis@uttyler.edu | 903.566.7206 |

## Course Description:

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 date.

***Prerequisite:*** *General Chemistry I (CHEM 1312) & General Chemistry I Lab (CHEM 1111), and credit for or concurrent enrollment in General Chemistry II(CHEM 1311).*

## Student Learning Outcomes (Core Objective Assessed):

- Students will demonstrate the ability to make scientific predictions of natural phenomena using chemical concepts learned in the lab. (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. (Empirical and Quantitative Skills, Communication Skills)
- Students will apply chemical concepts to draw logical conclusions about the applicability of data to real-world problems. (Critical Thinking Skills)
- Students will use collected data to calculate physical or chemical quantities germane to the experiment being performed. (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. (Teamwork)

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

- Use basic apparatus and apply experimental methodologies in the chemistry laboratory setting
- Demonstrate safe and proper handling of laboratory equipment and chemicals

## Materials Required for Lab Work:

**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 1112.006); and
- 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**

**General Chemistry Lecture Textbook**: This item may not be essential during class, but may be needed for reference purposes 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 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. **Face Mask** must be worn at all times while inside a campus building. This is a face-to-face only course and a face mask will be mandatory item and must be worn at all times while in the laboratory. The University provides one face mask free of charge. See the COVID-19 section for more details.

## Laboratory Requirements:

A. 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.

B. 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.

C. Students are responsible for laboratory equipment furnished by the Department of Chemistry and students may be required to purchase any missing or damaged equipment.

D. 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.)

E. 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.

F. Students are required to turn in a lab report for each experiment. Your instructor will explain what is expected in the lab reports.

G. Each instructor will provide an addendum to this syllabus listing specific requirements for that section.

**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,' in John Carey, *Eyewitness to Science* (1997), 437.**

## 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 and we have NO opportunity to make-up missed labs.

**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

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 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(s) of such absences at least one week before absence.

# Course Grading

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 the 90/80/70/60 percentage scale, but it may be adjusted based upon your instructor's judgment of the overall class performance.

## 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.

The grades for this course will be weighted as follows:

| | |
|---|---|
| 15% | Pre-Lab Quizzes |
| 25% | Laboratory Reports |
| 25% | Post Lab Quizzes |
| 15% | Teamwork Project |
| 20% | Laboratory Skill Exam |
| Total: 100% | |

## Lab 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 provide a title page, and depending on the experiment, a data/results section, experimental section, and conclusion section. This will be done for experiments 5-7. To accomplish this, you may need to generate tables and graphs/figures 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.

## Teamwork Project:

While it is important to be able to communicate scientific information in writing, it is equally important to do the same orally. In a group, you and your teammates will be required to collaborate and develop a presentation over an assigned molecule. You must present your presentation live, in-person during lab. More specific details for the project will be given to you by your instructor

## Post-Lab Quizzes:

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.

## 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.

## Laboratory Skill Exam:

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 experimental portion of the exam and then will an hour to complete calculations and short-answer questions.

## Dropping the Course:

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.

# Gen Chem 2 Laboratory Schedule

| Week Of: | Experiment Schedule |
|---|---|
| Jan 12-16 | Introduction to course, syllabus, schedule, lab notebooks & reports, lab safety, and teamwork project |
| Jan 19-23 | MLK Jr. Day – Labs will not meet this week |
| Jan 26-30 | Basic Excel Workshop |
| Feb 2-6 | Exp 1: Exploring the Properties of Gases<br>Post-lab Quiz |
| Feb 9-13 | Exp 2: Crystalline Lattice Structures<br>Post-lab Quiz |
| Feb 16-20 | Exp 3: Synthesis of Alum<br>Post-lab Quiz |
| Feb 23-27 | Exp 4: Determining Molar Mass by Freezing Point Depression<br>Post-lab Quiz & Choose Group due |
| Mar 2-6 | Lab Report & Excel Workshop |
| Mar 9-13 | SPRING BREAK! - Labs will not meet |
| Mar 16-20 | Exp 5: Spectrophotometric Determination of Food<br>Lab Report - Procedure, Data/Results, & Conclusion (2 pages max) |
| Mar 23-27 | Functional Groups & Review of Molecular Geometry and Bonding<br>2D Structure of Molecule (Identify any functional groups and molecular geometry of central atoms) due |
| Mar 30-Apr 3 | Exp 6: Determining Reaction Rate by Initial Rate Method<br>Lab Report - Procedure, Data/Results, & Conclusion (2 pages max)<br>ACS References due<br>Last day (Mar 30th) to drop or withdraw from a course with an grade of "W" |
| Apr 6– 10 | Exp 7: Determine the Acid Dissociation Constant of a Weak Acid<br>Lab Report - Procedure, Data/Results & Conclusion (2 pages max) |
| Apr 13-17 | Laboratory Skills Exam |
| Apr 20-24 | Teamwork Project |
| Apr 27-May 1 | Final Exams — Labs will not meet this week |

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

## UT Tyler Honor Code

Every member of the UT Tyler community joins together to embrace: Honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.

## Students Rights and Responsibilities

To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link: http://www.uttyler.edu/wellness/rightsresponsibilities.php

## Campus Carry

We respect the right and privacy of students 21 and over 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

## UT Tyler a Tobacco-Free University

All forms of tobacco will not be permitted on the UT Tyler main campus, branch campuses, and any property owned by UT Tyler. This applies to all members of the University community, including students, faculty, staff, University affiliates, contractors, and visitors. Forms of tobacco not permitted include cigarettes, cigars, pipes, water pipes (hookah), bidis, kreteks, electronic cigarettes, smokeless tobacco, snuff, chewing tobacco, and all other tobacco products. There are several cessation programs available to students looking to quit smoking, including counseling, quitlines, and group support. For more information on cessation programs please visit www.uttyler.edu/tobacco-free.

## Grade Replacement/Forgiveness and Census Date Policies

Students repeating a course for grade forgiveness (grade replacement) must file a Grade Replacement Contract with the Enrollment Services Center (ADM 230) on or before the Census Date of the semester in which the course will be repeated. (For Fall, the Census Date is Sept. 12, 2016.) Grade Replacement Contracts are available in the Enrollment Services Center or at http://www.uttyler.edu/registrar. Each semester's Census Date can be found on the Contract itself, on the Academic Calendar, or in the information pamphlets published each semester by the Office of the Registrar.

Failure to file a Grade Replacement Contract will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates are eligible to exercise grade replacement for only three course repeats during their career at UT Tyler; graduates are eligible for two grade replacements. Full policy details are printed on each Grade Replacement Contract. The Census Date (Sept. 12th) is the deadline for many forms and enrollment actions of which students need to be aware. These include:

- Submitting Grade Replacement Contracts, Transient Forms, requests to withhold directory information, approvals for taking courses as Audit, Pass/Fail or Credit/No Credit.
- Receiving 100% refunds for partial withdrawals. (There is no refund for these after the Census Date)
- Schedule adjustments (section changes, adding a new class, dropping without a "W" grade)
- Being reinstated or re-enrolled in classes after being dropped for non-payment
- Completing the process for tuition exemptions or waivers through Financial Aid

## State-Mandated Course Drop Policy

Texas law prohibits a student 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 another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the census date (See Academic Calendar for the specific date).

Exceptions to the 6-drop rule may be found in the catalog. Petitions for exemptions must be submitted to the Enrollment Services Center and must be accompanied by documentation of the extenuating circumstance. Please contact the Enrollment Services Center if you have any questions.

## Disability/Accessibility Services

In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments A (ADAAA) the University of Texas at Tyler offers accommodations to students with learning, physical and/or psychol