



GENERAL CHEMISTRY II LABORATORY

DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

SYLLABUS

FALL 2023

THE UNIVERSITY OF TEXAS AT TYLER

3900 UNIVERSITY BLVD.
TYLER, TX 75799

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MEETING TIMES AND DATES

SEMESTER RUNS FROM AUG 21 TO DEC 8

SECTION	TIME	ROOM	INSTRUCTOR
001	WED 1:00 PM-5:00 PM	RBS 3018	ROB MASON TANYA SHTOYKO*
002	TUES 5:30 PM-9:30 PM	RBS 3018	ROB MASON SHAUN BLACK*
*INSTRUCTOR OF RECORD FOR LISTED SECTION			

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 data.

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

INSTRUCTOR CONTACT INFORMATION

Instructor	Office	Office Hours	Email	Phone
Dr. Shaun Black* Senior Lecturer of Chemistry	RBS 3029	Monday 10:00 am—12:00 pm Thursday 12:00 pm—3:00 pm	sblack@uttyler.edu	903.566.7348
Mr. Jason DiStefano Lecturer of Chemistry Lab Coordinator	RBS 3006	Tuesday 10:00 am—12:00 pm Wednesday 2:00 pm—3:00 pm Thursday 10:00 am—12:00 pm	jdistefano@uttyler.edu	903566.7185
Mrs. Lauren Johnson Lecturer of Chemistry Lecture Instructor	RBS 3005	Monday 1:30 pm—3:30 pm Tuesday 1:30 pm—3:30 pm Wednesday 9:30 am—10:30 am	ljohnson@uttyler.edu	903.565.5508
Mr. Jerome Lewis Lecturer of Chemistry	RBS 3013	Monday 10:00 am—12:00 pm Tuesday 1:00 pm—2:30 pm Thursday 10:00 am— 11:30 am	jeromelewis@uttyler.edu	903.566.7206
Mr. Robert Mason Adjunct Lecturer	N/A	By appointment only	robertmason@uttyler.edu	N/A
Dr. Tanya Shtoyko* Professor of Chemistry, Chair	RBS 3003	Monday-Friday 11:15 am—12:15 pm	tshtoyko@uttyler.edu	903.565.5502



CHEMISTRY IS LIKE KUNG FU. A BUNCH OF FANCY TECHNIQUES THAT TAKES PATIENCE, ENERGY, HARD WORK, PRACTICE, AND TIME TO SEE RESULTS.

— JASON DISTEFANO

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 to:

- 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.
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 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.

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/sanitization 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.

See Additional COVID-19 Safety on page 7.

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 the 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. Due to COVID-19, laboratory space and experiment time is very limited. It is essential that all students come prepared to start working on their experiment as soon as class begins.

LAB REPORTS:

To reduce the spread of COVID-19, 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, chemicals used and their safety hazards, data, observations, and/or 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.

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.

The grades for this course will be weighted as follows:

15%	Pre-Lab Quizzes
30%	Laboratory Reports
20%	Post Lab Quizzes
15%	Teamwork Project
20%	Laboratory Skill Exam
100%	Total

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 an online lecture over an assigned topic. You must present your lecture live through Zoom. More specific details for the project will be given to you by your instructor

LABORATORY SKILL EXAM:

At the end of the semester, a laboratory skill exam (i.e. practical) will be given to test what you have learned in the course. The skill exam will be comprised of selected techniques and methods that the student will have to perform. All practical items in the exam will come from content covered in the experiments held during the course. Students will be scheduled a small of window of time to come to the lab and complete their laboratory skill exam. Your instructor will have more information about the laboratory skill exam at the date approaches.

LABORATORY SCHEDULE

<u>Week Of:</u>	<u>Experiment Schedule</u>
Aug 21	Introduction to course, syllabus, schedule, lab notebooks & reports, lab safety, and teamwork project
Aug 28	Exp 1: Exploring the Properties of Gases Lab Report—Title Page, Data/Results
Sep 4	Exp 2: Crystalline Lattice Structures Lab Report—Report Sheet Handout
Sep 11	Exp 3: Synthesis of Alum Lab Report—Title Page, Experimental
Sep 18	Exp 4: Determining Molar Mass by Freezing Point Depression Lab Report—Title Page, Experimental, Data/Results
Sep 25	Make-Up Experiment (Exp 1-4 only)
Oct 2	Lab Report and Excel Workshop
Oct 9	Exp 5: Spectrophotometric Determination of Food Dyes Lab Report—Title Page, Experimental, Data/Result, Conclusion
Oct 16	Exp 6: Determining Reaction Rate by Initial Rate Method Lab Report—Title Page, Experimental, Data/Result, Conclusion Last day (Mar 23rd) to drop or withdraw from a course with an grade of “W”
Oct 23	Exp 7: Determine the Acid Dissociation Constant of a Weak Acid Lab Report—Title Page, Experimental, Data/Result, Conclusion
Oct30	Make-Up Experiment (Exp 5-7 only)
Nov 6	Review of Molecular Geometry and Bonding
Nov 13	Teamwork Project
Nov 20	Thanksgiving Holiday—Labs will not meet this week.
Nov 27	Laboratory Skill Exam
Dec 4	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 & IMPORTANT INFORMATION

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.

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 are required to 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 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. The Grade Appeal form is found on 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 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. For more information, including filling out an application for services, please visit the SAR webpage at <http://www.uttyler.edu/disabilityservices>, 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. Campus resources for military-affiliated students are in the Military and Veterans Success Center (MVSC). 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).

UNIVERSITY POLICIES & IMPORTANT INFORMATION

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 in protecting your confidential information.

Recording of Class Sessions

Class sessions may be recorded by the instructor for use by students enrolled in the course. Recordings that contain personally identifiable information or other information subject to FERPA shall not be shared with individuals not enrolled in the course unless appropriate consent is obtained from all relevant students. Class recordings are reserved only for the use of students enrolled in the course and only for educational purposes. Course recordings should not be shared outside of the course in any form without express permission.

Absence for Official University Events or Activities

All courses follow the practices related to approved absences as noted by the Student Manual of Operating Procedures (Sec. 1 -501).

Absence for Religious Holidays

Students who anticipate being absent from class due to a religious holiday are requested to inform the instructor by the second class meeting of the semester.

Campus Carry

We respect the right and privacy of students who are duly licensed to carry concealed weapons in all courses. 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>.

Resources to assist you in the course

- UT Tyler Student Accessibility and Resource (SAR) Office (provides needed accommodations to students with document needs related to access and learning)
- UT Tyler Writing Center
- The Mathematics Learning Center
- UT Tyler PASS Tutoring Center
- UT Tyler Supplemental Instruction
- Upswing (24/7 online tutoring) - covers nearly all undergraduate course areas
- Robert Muntz Library and Library Liaison
- Digital Support Toolkit (For supported courses only. Students are automatically enrolled in the toolkit for supported courses)
- LIB 422 -- Computer Lab where students can take a proctored exam
- The Career Success Center
- UT Tyler Testing Center
- Office of Research & Scholarship Design and Data Analysis Lab

Resources available to UT Tyler Students

- UT Tyler Counseling Center (available to all students)
- TAO Online Support Center (online self-help modules related to mental & emotional health)
- Military and Veterans Success Center (supports for our military-affiliated students)
- UT Tyler Patriot Food Pantry
- UT Tyler Financial Aid and Scholarships
- UT Tyler Registrar's Office
- Office of International Programs
- Title IX Reporting
- Patriots Engage (available to all students. Get engaged at UT Tyler.)