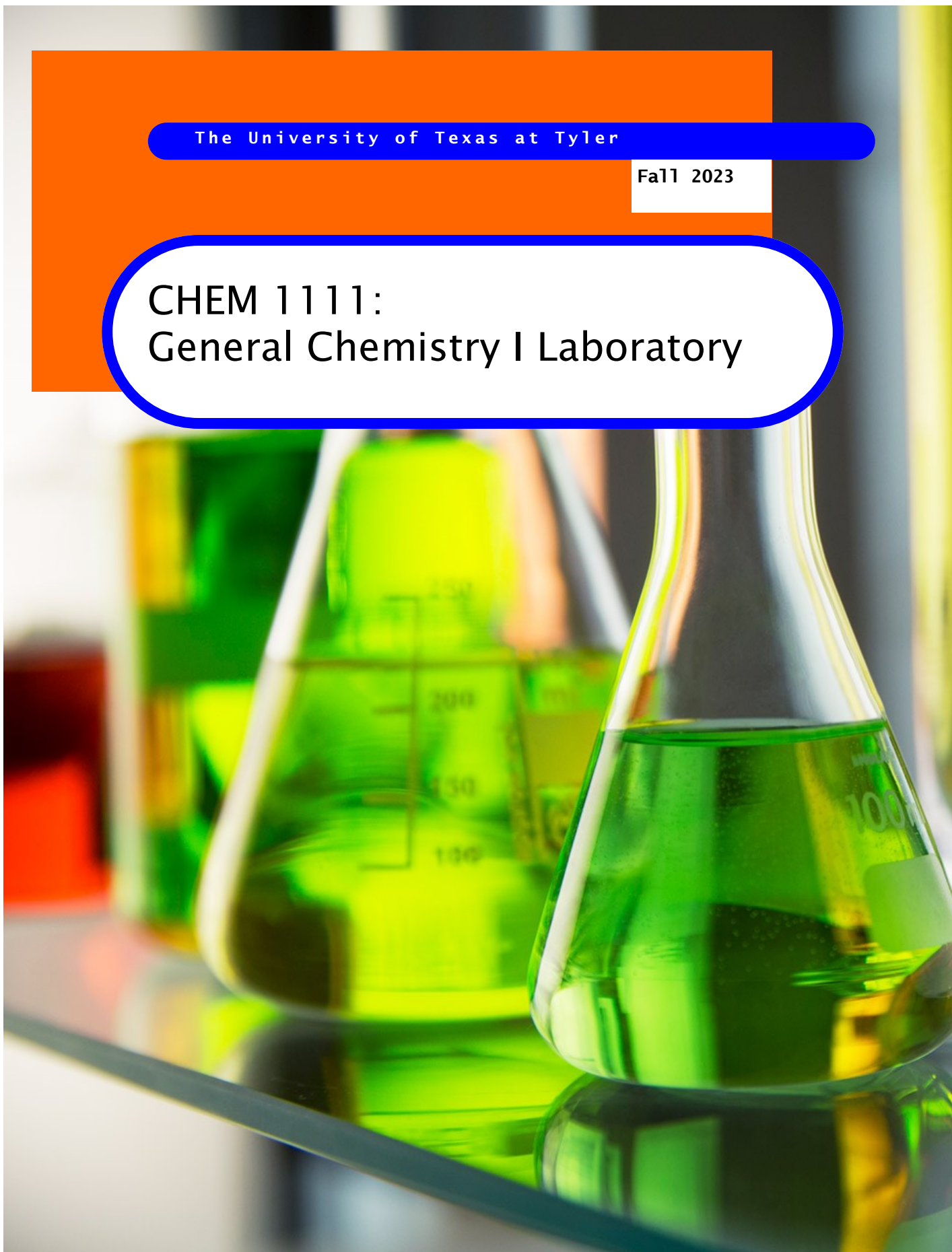


The University of Texas at Tyler

Fa11 2023

CHEM 1111: General Chemistry I Laboratory



Meeting Times and Dates August 21 – December 7

Where to find it:

Lab Times & Days	2
Instructor Information	2
Materials Required	3
Lab Requirements	4
Safety Policy	4
Attendance Policy	4
Reports & Grading	5
University Policies	6-8
Laboratory Schedule	9

Section	Time	Room	Instructor
001	M 1:00-5:00 PM	RBS 3018	Ms. Breanna McElderry *Mrs. Lauren Johnson
002	T 8:30 AM -12:30 PM	RBS 3018	Ms. Breanna McElderry *Dr. Dustin Patterson
003	T 1:00-5:00 PM	RBS 3018	Mrs. Rahma Aly *Dr. Jason Smee
004	W 1:00-5:00 PM	RBS 3018	Mr. Jerome Lewis
005	W 5:30-9:30 PM	RBS 3018	Ms. Colleen Trainor
006	Th 1:30-5:30 PM	RBS 3018	Ms. Sarah Glaesemann
007	F 8:30 AM -12:30 PM	RBS 3018	Dr. Shaun Black
008	F 1:00-5:00 PM	RBS 4014	Dr. Kai Zhang
009	F 1:00-5:00 PM	RBS 3018	Mrs. Rahma Aly *Dr. Laura Boyd

Instructor Information:

* Instructor of Record

Instructor	Office	Office Hours	Email	Phone
Ms. Breanna McElderry	RBS 2013	M 11:30 am-1pm T 1-2:30 pm	bmcelderry@patriots.uttyler.edu	
Mrs. Rahma Aly	RBS 2013	T,F 10:30 am-12 pm	rally@patriots.uttyler.edu	
Mr. Jerome Lewis	RBS 3013	M 10 am-12 pm, T 1-2:30pm, Th 10-11:30 am	jeromelewis@uttyler.edu	903.566.7206
Dr. Shaun Black	RBS 3029	M 10 am- 12 pm, Th 12-3 pm	sblack@uttyler.edu	903.566.7348
Ms. Colleen Trainor	RBS 3033	T 9 am-12 pm	ctrainor@uttyler.edu	
Ms. Sarah Glaesemann	RBS 2013	T 2-4 pm, Th 11:45 am-12:45 pm	sglaesemann@uttyler.edu	
Dr. Kai Zhang	RBS 3007A		kzhang@uttyler.edu	

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

Student Learning Outcomes:

- 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. Students will demonstrate

teamwork by working in small groups to complete an experiment. (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 Labwork:

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. 1111.001), semester, and the instructor's name;
- 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); and
- a *perforated*, carbonless duplicate for each page.

Lab Manual: 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, when needed.

Your **general chemistry lecture textbook**, when needed.

Computer access with Microsoft Excel and Word, Office Lens (Smart Phone), Zoom, Logger Pro

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!

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.



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.

[Chemistry] laboratory work was my first challenge. ... I still carry the scars of my first discovery—that test-tubes are fragile.

— Edward Teller

Edward Teller with Judith L. Shoolery, *Memoirs: A Twentieth Century Journey in Science and Politics*

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. 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. 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. In addition, several students will be assigned clean-up responsibilities during each lab session that include shelves, sinks, hoods, and reagent table. Students who neglect their clean-up responsibility will have their grades significantly lowered for that day's work. Therefore, it is important that students assigned to clean-up have their work 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.

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.

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 event (*e.g.*, athletic team travel). All supporting documentation should be presented to the lab instructor.

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.

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.

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

Course Grading

The grading of the lab reports, quizzes, and project 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 on Canvas the week before the experiment. It will be due before the lab starts each week to encourage you to be prepared for class. These will consist of short answer/multiple choice/simple calculation questions. Hints for the items to study for each quiz are given for each experiment in the manual.

Lab Reports: 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, and Procedure, 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 A detailed procedure should be written. This procedure should have enough detail that another person would be able to follow it.

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

Style & Formatting. Includes organization, neatness, grammar, etc. Hand writing that is not legible is subject to point deduction.

Headings. A complete heading at the top of each page of the lab notebook for each lab is required.

Results Section

Summary report sheets graded for accuracy and precision

Data (Notebook) - Organized and complete 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 paragraph summarizing your results (required data found on Canvas)

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

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. These will be due 48 hours after you have completed the 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 covering molecular geometry, valence shell electron pair repulsion, hybridization, etc. for an assigned molecule. Students will also create a virtual model of a their molecule. You must present your lecture live. More specific details for the project will be given to you by your instructor

Course Grade:

The percentage grades for this course will be weighted as follows:

15%	Pre-Lab Quizzes
20%	Post-lab Quizzes
15%	Teamwork Project
50%	<u>Laboratory Techniques and Reports</u>
100%	Total

University Policies:

Important Covid-19 Information for Classrooms and Laboratories

It is important to take the necessary precautions to ensure a healthy and successful year. UT Tyler continues to urge you to protect yourselves against the flu, COVID and any new threats that may be developing. Be diligent about preventive measures such as washing hands, covering sneezes/coughs, social distancing and vaccinations, which have proven to be successful in slowing the spread of viruses. Encourage those who don't feel well to stay home, and if they show symptoms, ask them to get tested for the flu or COVID. Self-isolation is important to reduce exposure (CDC quarantine/isolation guidelines). Please work with your faculty members to maintain coursework and please consult existing campus resources for support.

Should the Course go Online:

In the scenario that the course goes online during the semester. The instructor reserves the right to adjust assignments and grading scale. Student will still be required to meet during their assigned time unless specifically told by the instructor otherwise. Student will meet via Zoom.

Recording of Class Sessions

Class sessions may be recorded by the instructor for use by students enrolled in this course. Recordings that contain personally identifiable information or other information subject to FERPA shall not be shared with individuals not enrolled in this 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.

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 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 non-visible a diagnosis such as a learning disorder, chronic illness, TBI, PTSD, ADHD, or you have 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 Cynthia Lowery, Assistant Director Student Services/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.

Student Absence due to Religious Observance

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

Student Absence for University-Sponsored Events and Activities

If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.

Student Absence for University-Sponsored Events and Activities

If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.

Social Security and FERPA Statement

It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.

Emergency Exits and Evacuation

Everyone is required to exit the building when a fire alarm goes off. Follow your instructor's directions regarding the appropriate exit. If you require assistance during an evacuation, inform your instructor in the first week of class. Do not re-enter the building unless given permission by University Police, Fire department, or Fire Prevention Services.

UT Tyler Resources for Students

- UT Tyler Writing Center (903.565.5995), writingcenter@uttyler.edu ; UT Tyler Tutoring Center (903.565.5964), tutoring@uttyler.edu ; The Mathematics Learning Center, RBN 4021, this is the open access computer lab for math students, with tutors on duty to assist students who are enrolled in early-career courses.
- UT Tyler Counseling Center (903.566.7254)

Student Standards of Academic Conduct

Disciplinary proceedings may be initiated against any student who engages in scholastic dishonesty, including, but not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

i. "Cheating" includes, but is not limited to: copying from another student's test paper;

- using, during a test, materials not authorized by the person giving the test;
- failure to comply with instructions given by the person administering the test;
- possession during a test of materials which are not authorized by the person giving the test, such as class notes or specifically designed "crib notes". The presence of textbooks constitutes a violation if they have been specifically prohibited by the person administering the test;
- using, buying, stealing, transporting, or soliciting in whole or part the contents of an unadministered test, test key, homework solution, or computer program;
- collaborating with or seeking aid from another student during a test or other assignment without authority;
- discussing the contents of an examination with another student who will take the examination;
- divulging the contents of an examination, for the purpose of preserving questions for use by another, when the instructor has designated that the examination is not to be removed from the examination room or not to be returned or to be kept by the student;
- substituting for another person, or permitting another person to substitute for oneself to take a course, a test, or any course-related assignment;
- paying or offering money or other valuable thing to, or coercing another person to obtain an unadministered test, test key, homework solution, or computer program or information about an unadministered test, test key, home solution or computer program;
- falsifying research data, laboratory reports, and/or other academic work offered for credit;
- taking, keeping, misplacing, or damaging the property of The University of Texas at Tyler, or of another, if the student knows or reasonably should know that an unfair academic advantage would be gained by such conduct; and
- misrepresenting facts, including providing false grades or resumes, for the purpose of obtaining an academic or financial benefit or injuring another student academically or financially.

ii. "Plagiarism" includes, but is not limited to, the appropriation, buying, receiving as a gift, or obtaining by any means another's work and the submission of it as one's own academic work offered for credit.

iii. "Collusion" includes, but is not limited to, the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any section of the rules on scholastic dishonesty.

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.

CHEM 1111: Laboratory Schedule

Week of: Experiment & Exam Schedule

Aug 21 - 25 Introduction to Course: Syllabus, Schedule, Lab Notebooks, Pre-lab assignments, Pre-lab quizzes, Post-lab quizzes, Lab Reports, Lab Safety and Teamwork Project

Aug 28–Sept 1 1. Measurements in Chemistry

Sept 4-8 **No laboratories (Labor Day)**

Sept 11-15 2. Determining the Density of Solids and Liquids

Sept 18-22 3. Separating Components of a Mixture

Sept 25-29 4. Chromatography

Oct 2-6 5. Determining the Formula of a Hydrate

Oct 9-13 6. Reactions of Copper

Oct 16-20 7. Acid-Base Titration

Oct 23-27 8. Thermochemistry

Oct 30-Nov 3 9. Atomic Emission Spectra

Oct 30 ***Last day to drop or withdraw from a course with an automatic grade of "W"***

Nov 6–10 10. Molecular Geometry and Bonding

Nov 13-17 Teamwork Project Presentation

Nov 20-24 **Thanksgiving Break**

Nov 27-Dec 1 Make-Up labs (if necessary)

Dec 4-7 **Final Exam Weeks (No Lab)**

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